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ABSTRACT

The step-by-step cost benefit study, confined to measuring and comparing economic costs with economic benefits, is based on the 1971, 1972, and 1973 classes graduating from the Agribusiness-Machinery Partsman-Salesman Program at District One Technical Institute in Eau Claire, Wisconsin. Numerous tables throughout the report contain cost benefit data. Private Economic Costs, Chapter 1, are reflected in a general formula calculating the components of student opportunity cost, other school related expenses, percentage of students receiving financial aid in agribusiness, and the average amount of financial aid received by students in the agribusiness program. The model implies that a student would work or go to vocational school and does not consider the alternative of college. Chapter 2, Societal Economic Cost, identifies 16 components for computation: instructional costs (teachers), student opportunity costs, average financial aid given, equipment depreciation, building depreciation, ancillary and professional, administration local, debt service, operation/maintenance, transportation, fixed charges, transfers to clearing accounts, outgoing transfers accounts, school sales, food services, and school administration. Societal/private economic benefits are determined in Chapter 3; the concluding chapter determines societal/private benefit cost ratios. Two appendixes contain tabulations of material related to private/societal economic costs. (EA)

FINAL REPORT

Project No. 19-028-151-224

and

Project No. 19-029-151-224

CONCEPTUAL FRAMEWORK FOR CONDUCTING COST BENEFIT STUDIES IN WISCONSIN VTAE

and

COST BENEFIT STUDIES - VTAE PROGRAMS

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Eau Claire, Wisconsin

July, 1974

The project was funded pursuant to a grant with the Wisconsin Board of Vocational, Technical and Adult Education, thru use of federal funds from the U.S. Office of Education and by matching funds provided by the District One Technical Institute. The views or opinions stated in this report are those representing the professional judgment of the investigators and do not necessarily reflect the views of the participating agencies.

FOREWORD

This paper is intended to contribute to the objectives as set forth in project no. 19-028-151-224, Conceptual Framework for Conducting Cost Benefit Studies in Wisconsin VTAE, and at the same time to apply those concepts to an actual cost benefit study on an existing program in VTAE District One as stipulated in project no. 19-029-151-224, Cost Benefit Studies - VTAE Programs.

For the purpose of developing this framework and conducting this study, the research and planning office of District One obtained the services of Mr. Robert Webb, who was a graduate of the School of Business, University of Wisconsin-Eau Claire, class of May, 1974. Mr. Webb's qualifications in terms of conducting such a study are manifested by several accomplishments on his part. These accomplishments are:

1. He was the top graduate in his class in the School of Business.
2. At the time of graduation he was probably the first student in the history of that school to have completed majors in accounting, finance, and business administration.
3. During his senior year he received acceptance directly into doctoral studies at the University of Chicago, the University of Michigan, Northwestern University, and the University of Pennsylvania-Wharton School of Finance and Commerce; into graduate work with the option of entering doctoral studies at Stanford University; and was a finalist for admission to doctoral studies at Harvard University School of Business.

In reviewing this study, the reader should bear in mind that the rather complete absence of follow-up studies indicating initial earnings and average hours worked on the part of high school graduates in this part of Wisconsin, made it virtually impossible to draw accurate comparisons between the students in the District One Agri-Business Program and the control group as those

comparisons would relate to this data. Since this information was not available the author substituted corresponding data which was available on a national basis. Although this substitution detracts somewhat from the credibility of the specific ratios obtained, in terms of methodology it does emphasize the need for developing a system of follow-up whereby this data would become available.

Other hypotheses from which various deflators were used are set forth most vividly by the author. Again, the matter of which of these deflators, if any, should be applied will be left to those who will ultimately make the decision as to the precise model to be used in conducting cost benefit studies in the VTAE System.

In any event, all of us who are involved with the development of a cost benefit model for the VTAE System in Wisconsin, should find the effort and expertise which Mr. Webb has devoted to this study to be of invaluable assistance.

DISTRICT ONE TECHNICAL INSTITUTE - EAU CLAIRE

620 WEST CLAIREMONT AVENUE
EAU CLAIRE, WISCONSIN 54701

July 10, 1974

Mr. Wayne R. Atkins
Assistant Director for
Research and Planning
District One Technical Institute
620 West Clairemont Avenue
Eau Claire, WI 54701

Dear Mr. Atkins:

Attached is the cost-benefit study that I conducted on the Machinery Partsman-Salesman Program which is an associate degree program offered at District One Technical Institute. This draft is for your review and criticism only; it is not intended to be a final report.

The report that follows explains the steps I went through to arrive at the objective; the determination of societal and private economic benefit/cost ratios. I have attampted to explain the effects of different assumptions, presented arguments for and against the adoption of certain key procedures and assumptions, and have taken the liberty to make recommendations.

Throughout this study, I have endeavored to avoid computational errors, however, such errors inevitably slip into the data accumulation process.

Cordially,

Robert I. Webb

Robert I. Webb

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BRANCH OF AREA VOCATIONAL, TECHNICAL AND ADULT EDUCATION DISTRICT ONE
CECIL W. BEEDE, DISTRICT DIRECTOR

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INTRODUCTION

There is an inherent tendency to evaluate any program by cost alone. However, the correct measure of value (both societal and private) of a program is not determined by ranking programs by total costs, with the lower costing programs assigned more value than the higher costing programs or vice versa. Rather, correct evaluation of a program requires that costs be matched with benefits. This is the essence of cost benefit analysis.

The major source of societal economic benefits arises from increased output caused either by employing previously unemployed resources or increasing the output of existing employed resources. Basically, this increase in output is measured by total wages earned by the individual after training less the wages that he would have earned without additional training, reduced by the earnings difference that is due solely to any increased motivation or ability of the individual.[1] For society the amount of the economic benefits is gross of income taxes paid by the individual. While in determining private economic benefits, the amount is merely the increase net of income taxes. Sometimes it is argued

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[1]The effect of adjusting for the increased motivation and ability, of course, is to reduce societal and private economic benefits and lower the resultant benefit-cost ratios. James V. Koch in "A Benefit-Cost Analysis of Vocational Occupational Training at Selected Junior Colleges" incorporates into his general formula an adjustment factor of 25%. However, a study by Mr. Wayne R. Atkins, "A Study of Achievement and Scholastic Aptitude of Freshmen Technical Students at District One Technical Institute, 1970-71, By Program of Studies", showed the Agri-Business students to have ACT scores below the mean for all Midwest Level 1 students taking the test. This would seem to indicate, insofar as the ACT is a measure of ability, that there is no significant difference in ability between high school graduates not enrolled in school and Agri-Business students. The ACT does not measure motivation and it would appear, by the mere fact that the Agri-Business students enrolled in vocational school and the high school graduates did not, that a positive difference in motivation between the groups does exist. The significance of this difference is unknown. Because of these factors, this report does not include an adjustment for increased motivation and ability. Because of the critical importance of this issue, I would recommend that further research be conducted before an adjustment for increased motivation and ability is included.

that societal economic benefits are only the additional income taxes the government receives as the individual receives the remaining increase. However, such analysis confuses society with government. Society, as distinct from the government, enjoys the entire increase in output. Government receives only the additional income taxes. The private individual receives the increased earnings net of taxes. The total of the two must equal societal economic benefits.

The science of economics draws a fine distinction between earnings and income. Earnings accrue only to labor while income may be composed of returns to other factors of production, such as rents, profits and interest as well as earnings.

Barsby, in his cost-benefit study[2] noted:

"When cost and benefit components of a cost-benefit analysis are compared, comparison must be made at a given point in time. Since in most cases both costs and benefits accrue over a period of years, they must be discounted in order to take into account the time factor. There are three common methods of comparing costs with benefits: (1) present value of net benefits, (2) rate of return, and (3) benefit-cost ratio.

"The present value of benefits is calculated by discounting both benefits and costs back to the present (generally to the beginning of the program) and subtracting the calculated value of costs from benefits. This will tell us the absolute size of gain due to the program. Rate of return is calculated by finding the interest rate that will equalize the present value of costs and benefits. This tells us the rate of interest the "investment" in the program is earning. The benefit-cost ratio is calculated by dividing present value of benefits by present value of costs. This tells us how large the gain is relative to the size of the investment. The benefit-cost ratio differs from the present value

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[2]Barsby, Steven L., "The Application of Cost-Benefit Analysis in the Manpower Area", 1970 ED069890, pg. 13.

of net benefits because the latter tells us the absolute size of the gain. The benefit-cost ratio is usually best to use when there are budget constraints, because it allows attention to focus on gain per dollar spent."[3] This study has calculated benefit-cost ratios. However, the data accumulated and presented in this report is sufficient to use to determine results under the other two methods as well.

The Three Methods of Comparing[4] Benefits and Costs

Type of Comparison	Method of Calculation	Decision Rule
1. Present Value of Net Benefits	1. $\sum_{t=0}^{n} \frac{B_t - C_t}{(1+i)^t}$	1. Select the project with the highest net benefits first, then pursue succesive projects in descending order of net benefits.
2. Rate of Return	2. $\sum_{t=0}^{n} \frac{B_t - C_t}{(1+r)^t} = 0$	2. Select the project with the highest rate of return(r), then pursue succesive projects in descending order of r until r equals some predetermined interest rate(i).
3. Benefit-Cost Ratio	3. $\frac{\sum_{t=0}^{n} \frac{B_t}{(1+i)^t}}{\sum_{t=0}^{n} \frac{C_t}{(1+i)^t}}$	3. Select the project with the highest B/C, then pursue projects in descending order until B/C=1 or budget exhausted.

Where B_t = benefits in year t
C_t = costs in year t
n = number of years spanned by the analysis
i = social discount rate
r = rate of return

*Davie's notation is used here because of its simplicity.

[3]Each of the methods described above for comparing costs and benefits of a program has deficiencies that, under certain conditions, can result in an "incorrect" decision. These deficiencies are discussed in many places. See, for example, (66, pp. 49-69). (Barsby's footnote)

[4]Ibid., p. 14.

This study focuses on the Agri-Business-Machinery Partsman-Salesman Program at District One Technical Institute. According to the school catalog, "The Agri-Business program in Eau Claire is designed to provide training for distribution positions specializing in agricultural products and equipment. The machinery partsman salesman program deals chiefly with farm implements and equipment from a businessman's view point." It covers classes graduating in 1971-72 and 1973 from the program. Further, this cost benefit study has been confined to measuring and comparing economic costs with economic benefits; consequently non-economic costs and benefits were not considered. However, it was assumed that the size and direction of the non-economic costs and benefits would not alter the results of the study.

Two hypotheses from those suggested by Mr. Krogstad were adopted:

1. That the private economic benefits (PEB)>private economic costs (PEC)
2. That the societal economic benefits (SEB)>societal economic costs (SEC).

The first hypothesis reflects the incentive or the expected condition necessary to attract students to enter the program. The second hypothesis reflects the condition necessary for society to offer the program to students. Societal and private non-economic costs and benefits are ignored. As a result the following unfavorable conditions could also exist:

(1) $PNEB < PNEC$

(2) $PNEB + PEB < PEC + PNEC$

(3) $SNEB < SNEC$

(4) $SEB + SNEB < SEC + SNEC$

Again, it is assumed in this report that the amount and direction of the non-economic factors will not alter the results of the report.

Throughout my study I have used a 5-year time horizon and social and private discount rates = 5%.

CHAPTER ONE

PRIVATE ECONOMIC COSTS

Private Economic Costs - The General Formula:

$$PEC = \left[O_1 + E_1\right] - A_1F_1 + \left[O_2 + E_2\right] - A_2F_2$$

Where:

PEC = private economic costs

O = student opportunity cost

E = other school related expenses

A = percentage of students receiving financial aid who are in Agri-Business Program

F = the average dollar amount of financial aid received by students in Agri-Business Program

Housing, food and travel costs were ignored in that it was assumed that these costs would occur regardless of whether the student attended school or not. Foregone production at home while at school was also ignored in that it was assumed production would be foregone at home whether one attended school or went to work. The model does reflect the decreased value of money over time, school costs such as tuition fees, books, and supplies, etc., and foregone earnings while in school (i.e. opportunity costs). The most important component of private economic costs is the student opportunity cost. The other school related costs are minimal (see Appendix 1). Table 1 shows the average financial aid received by Agri-Business graduates.

Student Opportunity Costs - The General Formulae:

$$O = \left[(Y_1A_1U_1(1 + i)^1) - S_1\right] + \left[(Y_2A_2U_2) - S_2\right], \text{ or}$$

$$O = \left[(Z_1A_1U_1(1 + i)^1) - S_1\right] + \left[(Z_2A_2U_2) - S_2\right]$$

Where:

O = opportunity cost for Agri-Business Program graduates

Y = mean income of male year round full-time workers 18-24 completing 4 years of high school only

A = labor force participation rates of high school graduates not enrolled in school in October of year of graduation

U = 1-unemployment rate of high school graduates not enrolled in school in October of year of graduation

s = expected summer earnings of Agri-Business Program enrollee 10/52 x adjusted Y or adjusted Z

i = private discount rate = 5%

z = mean income of male workers 18-24 completing 4 years of high school only

The Model Opportunity Costs

The income that a high school graduate who does not pursue further education could expect to earn must be modified by the joint probability of his labor force participation (determined by labor force participation rates) and his securing employment (determined by 1-unemployment rate).

The labor force participation rates (see Table 6) refers to the percentage of the "civilian non-institutional population in the civilian labor force". The reason for the inclusion of this figure is to adjust for any periodic withdrawals from the labor force. (e.g. women have in the past frequently left the labor force) According to James V. Koch, author of the study entitled "A Benefit-Cost Analysis of Vocational-Occupational Training at Selected Junior Colleges"[1], "the effect of it (i.e. periodic withdrawals from labor force) is to lower the stream of income which accures to the individual", consequently lowering both the personal and social rates of return. However, while the labor force participation rates reflect participation in the labor force it does not account for unemployment experienced while in the labor force. The Koch study ignores this aspect. Consequently, I have included 1-the unemployment rate to adjust for this problem. Nationwide figures were used in determining employed labor force participation (see Table 6). (The effect of using nationwide figures probably upwardly distorts the results) Without this adjustment for unemployment, the above model would imply that work is both

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[5]James V. Koch, "The Benefit-Cost Analysis of Vocational-Occupational Training at Selected Junior Colleges", State of Illinois Advisory Council on Vocational Education, 1974, p. 10.

available and attainable by high school graduates without further training. However, as noted by the attached unemployment rates tables, that assumption may not be correct. In that case the relevant opportunity costs for a student facing either unemployment or vocational school would be zero as zero earnings are foregone by securing admission and entry into a vocational school program. Society has an opportunity cost in either event, however.

Further, this model implies that a student would either (1) work, or (2) go to vocational school (entering the program under consideration). However, this analysis ignores the possibility of having a third alternative of going to college instead of going to work. In this case the relevant societal opportunity costs would be zero. Dr. Ghazalah would argue that in the absence of the work alternative, the individual would still have an opportunity cost even though society would not have one.[6]

The unemployment and labor force participation rates for high school graduates in time 1 (see Table 6) are assumed to change in time 2 for time 1 high school graduates to the rate experienced by time 2 high school graduates. In determining which rates to use, the rate for white males was selected as this best represents the population of Agri-Business Program majors (there were no women enrollees or minority group member enrollees in the Agri-Business Program according to the Student Services Department).

Some would argue that student opportunity costs should not be reduced for the labor force participation rates of high school graduates not enrolled in school if that rate is less than one. This argument is as follows: the vocational school student goes to vocational school for one purpose and one purpose only--to train for a job. Therefore, if they had not entered vocational

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[6]Ismail Ghazalah, "Role of Vocational Education in Improving Skills and Earning Capacity in the State of Ohio: A Cost Benefit Study", State of Ohio, Department of Education, Division of Vocational Education, p. 16.

school then they would have entered the labor force; hence, the labor force participation rate of the population of vocational school students would equal one. Consequently, a labor force participation rate of one should be used. This issue is important as the effect of using labor force participation rates less than one is to reduce opportunity cost and as a result to increase private economic benefits and societal economic benefits and hence increase benefit-cost ratios. However, the above argument ignores these reasons for labor force non-participation and further implicitly assumes those reasons to be voluntary only. (see Reasons Outside Labor Force). Reasons such as illness or disability, school attendance (perhaps college), or home responsibilities, etc., are likely to make the labor force participation rates of vocational school students less than one.

REASONS FOR BEING OUTSIDE LABOR FORCE, BY SEX, 1972*
(Thousands of persons 16 years and over)

Labor Force Status		Total	Men	Women
Civilian non-institutional population		143,326	67,458	75,868
In civilian labor force		86,542	53,265	33,277
Not in labor force		56,785	14,192	42,591
Do not want job now, total		52,321	12,845	39,476
Current activity:	In school	6,301	3,215	3,086
	Ill, disabled	4,313	2,250	2,063
	Homemaker	32,384	190	32,194
	Retired, old	6,691	5,720	984
	Other	2,632	1,488	1,144
Want job now, total		4,461	1,347	3,114
Reason not looking:	School attendance	1,200	612	588
	Ill health, disability	632	271	361
	Home responsibilities	1,098	24	1,074
	Think cannot get job	765	240	525
	All other reasons	766	200	566

*Reprinted from The Manpower Report of the President, 1973.

If mean income (whether year round full-time worker or all males) is used then since this is the mean income of the age group 18-24, one might argue that the interest rate adjustment should be excluded for the first year to avoid further upward bias (if any) of the data. The argument being that the mean income is upwardly distorted by those at the higher age of the interval. Specifically, because they are older, they are earning more money (assuming that income increases with age). Consequently, to increase mean income again by the interest rate adjustment would upwardly bias the opportunity costs. However, this analysis still ignores the time value of money.

A more serious objection arises to using mean income of all males and adjusting for probability of unemployment. Essentially, earnings are a function of the wage per hour and the number of hours worked. The mean income of all males it is felt reflects periods of less than full-time employment and more importantly periods of unemployment experienced by the age group 18-24. Hence, to adjust for this factor again through multiplying by 1-unemployment rate, would be misleading. However, the mean income of all males 18-24 completing four years of high school only does not reflect those in the labor force who remain unemployed year round without income. Again, the issue is important as the effect of adjusting mean income of all males by 1-unemployment rate is to increase private economic benefits and societal economic benefits and consequently the benefit-cost ratios. If the mean income of year round full-time workers is used instead, then the unemployment problem is eliminated. But, the question that arises then, is it fair to use the mean income of year round full-time workers to determine opportunity costs when the universe of jobs available to high school graduates includes less than full-time and in some cases less than year round positions? As a result, I have incorporated both mean income figures into the opportunity cost calculations.

Tables 2A and 2B show the conversion of calendar year mean income data to academic year data; an adjustment necessary in order to calculate the mean income earned during the academic year.

Tables 3A and 3B show the adjustment of academic year mean income for labor force participation and unemployment. The resultant net earnings figures are further reduced by summer earnings. (Case 1 summer earnings were computed by multiplying 10/52 x mean income adjusted for labor force participation and unemployment, of male year round full-time workers) The two unadjusted (for time value of money) opportunity costs that result for each table depend on what assumption is made for summer earnings. The labor force participation and unemployment rates used to adjust the summer earnings of Agri-Business students due to lack of available data were assumed to be the same as those of the population of high school graduates not enrolled in school. The most recent study (Table 4) of labor force status in summer of students enrolled in school was conducted by the Labor Department in 1969. However, the results of that study do not differ significantly from the results of the method employed due to data limitations. Summer earnings were computed by multiplying 10/52 by mean income. This was done due to the lack of available accurate data on summer earnings. It would seem that this procedure would establish a range of expected summer earnings with 10/52 of the mean income of male year round full-time workers being the highest and 10/52 of the mean income of all male workers being the lowest.

Table 5 summarizes the student opportunity costs, per Agri-Business enrollee, adjusted and unadjusted for the time value of money, using both the mean income of all male workers, Case 1 and the mean income of male year round full-time workers, Case 2. Ease case is further subdivided into two subcases; Case 1 and Case 2. The student opportunity costs that result are contingent upon what

TABLE 1

Average Financial Aid* Received by Semester for Agri-Business Graduates
By Graduating Classes for 1971, 1972, 1973

	1969	1970	1970	1971	1971	1972	1972	1973
Graduating Class:								
1971	22.73	22.73	88.91	88.91				
1972					12.50	12.50		
1973					104.68	104.68	62.50	62.50

*Financial Aid here excludes all loans and work-study. It also ignores any interest subsidy on loans.

Data was obtained from Financial Aid files for actual graduating classes 1971-73.

Case 1

TABLE 2A

Schedule Converting Calendar Year Mean Income in Current Dollars Of Males 18-24 Attaining 4 Years of High School Education Only To Academic Year Income for the Years 1969-1972

	1969	1970	1971	1972
Calendar Year*	$3,989	$4,172	$4,195	$4,837
	(x 7/12 + x 5/12)	(x 7/12 + 5/12)	(x 7/12 + x 5/12)	(x1)
Academic Year	$4,065.25	$4,181.54	$4,462.50	$4,837.00

*Source: Table 2 "Mean Income in 1956 to 1972 of Men, by Selected Age Group and Years of School Completed". Current Population Reports, Consumer Income: Annual Mean Income Lifetime Income and Educational Attainment of Men in the United States for Selected Years 1956-1972. U.S. Department of Commerce, Social and Economic Statistics Administration, Bureau of the Census Series P-60 No. 92, March, 1974.

Case 2

TABLE 2B

Schedule Converting Calendar Year Mean Income in Current Dollars Of Male of Year Round Full-Time Worker Age 18-24 Attaining 4 Years of High School Education Only to Academic Year Mean Income for the Years 1969-1972

	1969	1970	1971	1972
Calendar Year*	$6,157	$6,493	$6,993	$6,927
	(x 7/12 + x 5/12)	(x 7/12 + x 5/12)	(x 7/12 + 5/12)	(x1)
Academic Year	$6,297.00	$6,457.33	$6,615.50	$6,927.00

*Source: Table 5 "Mean Income in 1967 to 1972 of Male Year Round Full-Time Workers, by Selected Age Group and Years of School Completed". Current Population Reports; Consumer Income: Annual Mean Income, Lifetime Income and Educational Attainment of Men in the United States for Selected Years 1956-1972. U. S. Department of Commerce Social and Economic Statistics Administration Bureau of the Census Series P-60 No. 92, March, 1974.

Case 1

TABLE 3A

Schedule of Unadjusted Student Opportunity Costs of Agri-Business Program Enrollees Using Mean Income, in Current Dollars, of Males Age 18-24 Attaining 4 Years of High School Only for the Academic Years 1969-1972

	1969	1970	1971	1972
Academic Year Mean Income	$4,065.25	$4,181.59	$4,462.50	$4,837.00
Labor Force Participation Rate 1	x 90.0%	x 87.4%	x 90.0%	x 91.2%
1 - Unemployment Rate	x 92.4%	x 87.1%	x 86.0%	x 87.7%
NET EARNINGS	$3,380.66	$3,183.25	$3,453.98	$3,868.75
Less Adjusted Summer Earnings:				
Case 1	$ 767.12	$ 802.28	$ 806.70	$ 930.16
Unadjusted Student Opportunity Costs	2,513.54	2,380.97	2,547.28	2,938.59
Case 2	1,007.08	944.41	984.65	1,065.42
Unadjusted Student Opportunity Costs	$2,373.58	$2,238.84	$2,469.63	$2,803.33

CASE 2

TABLE 3B

Schedule of unadjusted student opportunity costs of Agri-Business Program enrollees using mean income, in current dollars, of male year around, full-time workers age 18-24 attaining 4 years of high school only for the academic years 1969-1972.

	1969	1970	1971	1972
Academic Year Mean Income	$6,297.00	$6,457.33	$6,615.00	$6,927.00
Labor Force Participation Rate *1	x 90%	x 87.4%	x 90%	x 91.2%
1-Unemployment Rates *1	x 92.4%	x 87.1%	x 86%	x 87.7%
Net Earnings	$5,236.59	$4,911.10	$5,120.40	$5,540.38
Less Adjusted Summer Earnings:				
Case 1	767.12	802.28	806.70	930.16
Unadjusted Student Opportunity Costs	$4,469.47	$4,108.82	$4,313.70	$4,610.22
Case 2	1,007.08	944.41	984.65	1,065.42
Unadjusted Student Opportunity Costs	$4,229.51	$3,966.69	$4.135.75	$4,474.96

*1 Source: Table 32 "Employment Status of High School Graduates Not Enrolled in College and of School Dropouts as of October of Year of Graduation or Dropout, by sex, Marital Status of Women, and Color 1959-1972." Handbook of Labor Statistics 1973. United States Department of Labor, Bureau of Labor Statistics.

*2 Adjusted Summer Earnings were computed as follows: This procedure was followed to arrive at both Case 1 and Case 2 figures.

Calendar Year Mean Income

x 10/52 Summer Vacation / Calendar Weekly

x LFPR'S of H/S Grads in Oct. of Grad Yr.

x 1-Unemployment role of above group

= Adjusted Summer Earnings

TABLE 4

Labor Force Status in Summer of 1969 of White Males 18-21 Enrolled in School in October 1969

	18 & 19	20 & 21
In labor force for summer job only	60.2%	57.5%
Worked during summer	56.3%	53.5%
Looked but didn't find a summer job	3.9%	4.0%
Worked at job not for summer only	29.7%	27.1%
Didn't participate in labor force during summer	10.1%	15.4%
Total labor force participation during summer	89.9%	84.6%
Summer unemployment rate	3.9%	4.0%

Source: Table is based on and is a partial reprint of Table A "Labor Force Status in Summer 1969 of Persons 16-21 Years Old Enrolled in School in October 1969, by Age, Sex, and Color October 1969" Students and Summer Jobs October 1969. Special Labor Force Report 128, United States Department of Labor Bureau of Labor Statistics 1971.

TABLE 5

Unadjusted and Adjusted Student Opportunity Costs per Enrollee by Semester* for the Academic Years 1969-1972

	1969	1970	1970	1971	1971	1972	1972	1973
UNADJUSTED:								
CASE 1								
Case 1 sc	$1,256.77	$1,256.77	$1,190.49	$1,190.49	$1,273.64	$1,273.64	$1,469.30	$1,469.30
Case 2 sc	1,186.76	1,186.76	1,119.42	1,119.42	1,234.81	1,234.81	1,401.66	1,401.66
CASE 2								
Case 1 sc	2,618.30	2,618.30	2,455.55	2,455.55	2,560.20	2,560.20	2,770.19	2,770.19
Case 2 sc	2,114.76	2,114.76	1,983.35	1,983.35	2,067.88	2,067.88	2,237.48	2,237.48
ADJUSTED:								
CASE 1								
Case 1 sc	1,319.61	1,319.61	1,250.01	1,250.01	1,337.32	1,337.32	1,542.76	1,542.76
Case 2 sc	1,245.10	1,245.10	1,175.39	1,175.39	1,296.55	1,296.55	1,471.74	1,471.74
CASE 2								
Case 1 sc	2,749.21	2,749.21	2,578.33	2,578.33	2,688.21	2,688.21	2,908.70	2,908.70
Case 2 sc	2,220.50	2,220.50	2,082.51	2,082.51	2,171.27	2,171.27	2,349.36	2,349.36

*Semester student opportunity costs were computed by dividing academic year costs in half.

summer earnings assumption is made. For example, CASE 1, Case 2 means the student opportunity cost was computed by using the adjusted mean income of all male workers reduced by summer earnings (calculated by multiplying 10/52 by the mean income of all male year round full-time workers).

Table 6 is reprinted from the Handbook of Labor Statistics 1973. It is the source of the labor force participation and unemployment rates used for the population of male high school graduates 18-24 years old and not enrolled in school.

Tables 7A, 7B, 7C, and 7D are schedules of the private economic costs per enrollee in the Agri-Business Program. The differences are due solely to the different student opportunity cost assumptions. For the first academic year of each graduating class time adjusted figures were used; for the second academic year unadjusted student opportunity costs were used.

TABLE 6

32. Employment Status of High School Graduates Not Enrolled in College and of School Dropouts as of October of Year ...ation or Dropout, by Sex, Marital Status of Women, and Color, 1959–72—Continued

[... to 24 years of age; numbers in thousands]

Item	High school graduates							School dropouts						
	Civilian noninstitutional population	Civilian labor force					Not in labor force	Civilian noninstitutional population	Civilian labor force					Not in labor force
		Total		Employed	Unemployed				Total		Employed	Unemployed		
		Number	Percent of population		Number	Percent of civilian labor force			Number	Percent of population		Number	Percent of civilian labor force	
1958														
...l	1,303	986	75.7	846	140	14.2	317	266	[illegible]	64.7	141	31	18.0	91
	498	435	87.3	397	38	8.7	63	152	124	81.6	101	23	18.5	28
	805	551	68.4	449	102	18.6	254	114	48	42.1	40	8	(3)	66
	668	485	72.6	399	86	17.7	183	75	41	(4)	35	5	(3)	32
...ed, widowed, di-														
...ed, separated	137	66	48.2	50	16	(3)	71	39	[illegible]	[illegible]	5	.....	.....	34
	1,150	893	77.0	778	115	12.9	257	215	115	64.[illegible]	116	22	15.6	77
...l other races	113	93	65.0	68	25	(3)	50	48	31	(3)	22	9	(3)	17
1967														
...l	1,214	956	78.7	801	155	16.2	258	301	196	65.1	149	47	24.0	105
	484	419	86.6	379	40	9.5	65	157	1[illegible]	82.2	104	25	19.4	28
	730	537	73.6	422	115	21.4	193	144	6[illegible]	46.5	45	22	(3)	77
	630	486	77.0	384	102	21.0	144	91	1[illegible]	52.1	33	16	(3)	45
...d, widowed, divorced,														
...rated	100	51	51.0	38	13	(3)	49	50	[illegible]	(3)	12	6	(3)	32
	1,064	847	79.6	728	119	14.0	217	249	1[illegible]	65.7	122	35	22.3	82
...l other races	150	109	72.7	73	36	33.0	41	62	3[illegible]	(3)	27	12	(3)	23
1968														
...al	1,162	904	77.8	782	122	13.5	258	328	[illegible]	63.4	164	44	21.2	120
	456	384	84.1	345	39	10.2	72	177	1[illegible]	75.7	111	23	17.2	43
	706	520	71.6	437	83	16.0	206	151	[illegible]	59.0	54	21	(3)	77
	591	449	76.0	380	69	15.4	142	95	[illegible]	54.7	35	16	(3)	43
...ed, widowed, divorced,														
...rated	155	71	52.6	57	14	(3)	61	56	[illegible]	(3)	17	5	(3)	34
	999	775	77.4	684	91	11.7	224	257	1[illegible]	65.5	131	37	21.6	86
...l other races	163	129	79.1	98	31	24.0	34	71	[illegible]	(3)	30	7	(3)	34
1969														
...al	1,326	1,049	79.1	929	120	11.4	277	363	[illegible]	69.9	182	39	17.6	142
	540	486	90.0	449	37	7.6	54	196	1[illegible]	85.1	131	24	15.1	37
	786	563	71.6	480	83	14.7	223	167	[illegible]	37.1	47	15	(3)	105
	647	491	76.4	425	69	14.0	153	102	[illegible]	41.1	37	10	(3)	57
...ed, widowed, divorced,														
...rated	139	69	49.6	55	14	(3)	70	65	[illegible]	(3)	12	5	(3)	48
	1,112	910	79.7	834	76	8.4	232	285	[illegible]	55.1	141	29	16.8	115
...l other races	184	139	75.5	95	44	31.7	45	75	[illegible]	64.0	38	10	(3)	27
1970														
...al	1,330	1,027	77.2	841	186	18.1	303	376	[illegible]	62.0	168	65	27.9	143
	602	526	87.4	458	68	12.9	76	187	1[illegible]	77.5	99	46	31.7	42
	726	501	69.0	383	118	23.6	225	[illegible]	[illegible]	46.6	63	19	21.6	101
	582	441	75.8	334	107	24.3	141	125	[illegible]	55.2	55	14	(3)	56
...ed, widowed,														
...rced, separated	146	60	41.1	49	11	(3)	86	64	[illegible]	(3)	11	5	(3)	45
	1,177	922	78.3	772	150	16.3	255	296	[illegible]	63.9	142	47	24.9	107
...d other races	154	105	68.6	69	36	34.3	48	80	[illegible]	55.0	26	18	(3)	36
1971														
...al	1,336	1,051	78.7	870	181	17.2	285	353	[illegible]	66.6	178	57	24.3	118
	581	523	90.0	450	73	14.0	58	207	[illegible]	81.2	124	11	26.2	30
	755	528	69.9	420	108	20.5	227	146	[illegible]	45.9	51	13	(3)	79
	612	451	73.2	355	99	21.8	158	[illegible]	[illegible]	52.8	37	10	(3)	42
...ed, widowed,														
...rced, separated	143	74	51.7	65	9	(3)	69	57	[illegible]	(3)	17	3	(3)	37
	1,196	944	79.3	801	113	15.1	216	297	3[illegible]	68.4	156	17	23.2	71
...d other races	146	107	73.3	69	38	35.5	39	56	[illegible]	(3)	22	10	(3)	21
1972														
...al	1,604	1,237	82.2	1,055	182	14.7	267	393	[illegible]	61.8	178	65	26.7	150
	671	612	91.2	537	76	12.3	59	193	[illegible]	78.8	111	38	25.0	41
	933	625	75.0	518	107	17.1	308	201	[illegible]	45.6	61	27	30.7	101
	675	536	79.4	419	87	16.2	139	125	[illegible]	56.8	50	21	(3)	54
...ed, widowed, divorced,														
...rated	158	[illegible]	56.3	69	20	22.5	69	75	[illegible]	36.7	14	6	(3)	55
	1,322	1,068	83.1	961	131	12.2	224	328	[illegible]	63.2	155	53	25.5	150
...d other races	182	139	76.4	91	18	34.5	43	65	3[illegible]	(3)	23	12	(3)	30

...not available by color.
...vailable.

[illegible] Percent not shown where base is less than 100,000.
[illegible] Percent not shown where base is less than 75,000.

This column is the labor force participation rates of high school graduates.

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FROM: Handbook of Labor Statistics, 1973, U.S. Department of Labor

TABLE 7A

Schedule of Private Economic Costs of Agri-Business Program Enrollees, Per Enrollee, by Academic Year for classes graduating in 1971-73.

	1971		1972		1973	
	1969-70	1970-71	1970-71	1971-72	1971-72	1972-73
Tuition	0	0	0	0	0	0
Books & Supplies	65	65	65	65	65	65
Laboratory Fees	13	27	13	27	13	27
Enrollment Test & ACT	8.50	0	8.50	0	8.50	0
Career Personality Profile Test	3.00	0	3.00	0	3.00	0
Graduation Fee	9.00	0	9.00	0	9.00	0
Student Opportunity Cost (using mean income of all male workers)	2,639.22	2,380.98	2,500.22	2,547.28	2,674.64	2,938.60
Gross Private Economic Costs	2,737.72	2,472.98	2,598.72	2,639.28	2,773.14	3,030.60
Less Average Financial Aid received	45.46	177.82	0	25	209.36	135
Net Private Economic Costs	2,692.26	2,295.16	2,598.72	2,614.28	2,563.78	2,895.60

TABLE 7B

Schedule of Private Economic Costs of Agri-Business Program Enrollees, Per Enrollee, by Academic Year for classes graduating in 1971-73.

	1971		1972		1973	
	1969-70	1970-71	1970-71	1971-72	1971-72	1972-73
Tuition	0	0	0	0	0	0
Books & Supplies	65.00	65.00	65.00	65.00	65.00	65.00
Laboratory Fees	13.00	27.00	13.00	27.00	13.00	27.00
Enrollment Test & ACT	8.50	0	8.50	0	8.50	0
Career Personality Profile Test	3.00	0	3.00	0	3.00	0
Graduation Fee	9.00	0	9.00	0	9.00	0
Student Opportunity Cost (using mean income of all males)*	2,490.20	2,238.84	2,251.76	2,469.62	2,593.10	2,803.30
Gross Private Economic Costs	2,588.70	2,330.84	2,349.26	2,561.62	2,691.60	2,895.32
Less Average Financial Aid received	45.46	177.82	0	25	209.36	135
Net Private Economic Costs	2,543.24	2,153.02	2,349.26	2,536.62	2,482.24	2,760.32

*Student Opportunity Costs were determined using mean income of all males reduced by summer earnings (10/52 x mean earnings of a year round full-time worker).

TABLE 7C

Schedule of Private Economic Costs of Agri-Business Program Enrollees, Per Enrollee, by Academic Year for classes graduating in 1971-73.

	1971		1972		1973	
	1969-70	1970-71	1970-71	1971-72	1971-72	1972-73
Tuition	0	0	0	0	0	0
Books & Supplies	65	65	65	65	65	65
Laboratory Fees	13	27	13	27	13	27
Enrollment Test & ACT	8.50	0	8.50	0	8.50	0
Career Personality Profile Test	3.00	0	3.00	0	3.00	0
Graduation Fee	9.00	0	9.00	0	9.00	0
Student Opportunity Cost (using mean income of year round full-time worker)	5,498.42	4,911.10	5,156.66	5,120.40	5,376.42	5,540.28
Gross Private Economic Costs	5,596.92	5,003.10	5,225.16	5,212.40	5,474.92	5,632.28
Less Average Financial Aid received	45.46	177.82	0	25	209.36	135
Net Private Economic Costs	5.551.46	4,825.28	5,225.16	5,187.40	5,265.56	5,497.28

TABLE 7D

Schedule of Private Economic Costs of Agri-Business Program Enrollees, Per Enrollee, by Academic Year for classes graduating in 1971-73.

	1971		1972		1973	
	1969-70	1970-71	1970-71	1971-72	1971-72	1972-73
Tuition	0	0	0	0	0	0
Books & Supplies	65.00	65.00	65.00	65.00	65.00	65.00
Laboratory Fees	13.00	27.00	13.00	27.00	13.00	27.00
Enrollment Test & ACT	8.50	0	8.50	0	8.50	0
Career Personality Profile Test	3.00	0	3.00	0	3.00	0
Graduation Fee	9.00	0	9.00	0	9.00	0
Student Opportunity Cost (using mean income of all males)**	4,441.00	3,966.70	4,165.02	4,135.76	4,342.54	4,474.96
Gross Private Economic Costs	4,539.50	4,058.70	4,263.52	4,227.76	4,441.04	4,566.96
Less Average Financial Aid received	45.46	177.82	0	25	209	135
Net Private Economic Costs	4,494.04	3,880.88	4,263.52	4,202.76	4,232.04	4,431.96

**Student Opportunity Costs were determined using mean income of male year round full-time workers reduced by summer earnings (10/52 x mean income of male year round full-time workers).

TABLE 8A

Instructional Costs* by Semester Rank for Agri-Business Program Enrollees for the years 1969-1973

	1969	1970	1970	1971	1971	1972	1972	1973
Instructional Costs:								
Semester Rank								
1st	$4027.40		$4781.73		$6928.25			
2nd		$3740.49		$5325.08		$5114.13		
3rd			$2959.88		$3161.50		$2606.40	
4th				$2658.80		$3172.32		$2653.92
1971 Class				$13386.57				
1972 Class						$16440.63		
1973 Class								$17302.70

*See supporting tables for details of instructional costs.

TABLE 8B
SHOWING AGRI-BUSINESS ENROLLMENT
BY SEMESTER RANK FOR THE YEARS 1969-1973

	1st	2nd	3rd	4th	Total
1969 1st Semester	13	1	11	0	25
1970 2nd Semester	2	13	1	7	23
1970 1st Semester	19	1	11	4	32
1971 2nd Semester	3	17	1	10	31
1971 1st Semester	25	2	10	0	37
1972 2nd Semester	5	21	1	8	35
1972 1st Semester	17	2	12	3	34
1973 2nd Semester	8	15	2	12	37

Data obtained from District One VTAE Student Services Department's Enrollment Reports for the academic year 1969-1973.

CHAPTER TWO

SOCIETAL ECONOMIC COSTS

SOCIETAL ECONOMIC COSTS

The computation of societal economic costs required first the identification of the components of societal economic costs. Following closely suggested guidelines, modified for audit reports classifications, the components were identified as follows:

(1) Instructional Costs (Teachers)

(2) Student Opportunity Costs

(3) Average Financial Aid Given

(4) Equipment Depreciation

(5) Building Depreciation

(6) Ancillary and Professional

(7) Administration Local

(8) Debt Service

(9) Operation and Maintenance

(10) Transportation

(11) Fixed Charges

(12) Transfers to Clearing Accounts

(13) Outgoing Transfers Accounts

(14) School Sales (Net Expenditures)

(15) Food Services (Net Receipts or Net Expenditures)

(16) State Administration

Since the study focused on classes graduating in 1971, 1972 and 1973, it was necessary to reflect only the enrollment associated with these classes. Consequently, I made a simplifying assumption. I assumed that each graduating class entered in the fall of two years preceding graduation (for example, the 1971 graduating class entered in the fall of 1969 as first semester rank enrollees and costs reflect only first semester rank students). This assumption is important for it is these enrollment numbers (See Table 8) that were used to arrive at total semester costs for "per enrollee cost categories"--instructional costs, financial aid, and student opportunity costs. The encircled numbers on Table 8 show the enrollment figures I used to calculate semester costs as well as the semester rank groups.

Next, I determined the required course schedule for Agri-Business Program students using District One Technical Institute catalogs for 1969-71 or the catalog for 1971-73. I assumed that each enrollee followed the required course schedule for his semester rank. Where electives existed I selected one course and assumed that all of the same semester rank enrollees took that course. The selection of electives was determined after consulting with instructors of the Agri-Business Program. This necessitated the construction of a required course schedule showing what teachers taught, what course, and how many sections of each course they taught (See Appendix). This latter refinement was necessary to determine a weighted average cost per enrollee. Since with many sections available, a student could have enrolled in any one of several sections, I assumed that each section had a random probability of selection. Consequently, I weighted instructional cost per course by number of sections a teacher taught (See Appendix) and divided by total enrollment to arrive at a weighted average cost per enrollee.

Instructional Costs:

$IC = \propto \$ X$

Where:

IC = Instructional costs per course

$\propto$ = Percentage of instructional time devoted to course

C = Salary and fringe benefits

N = Actual enrollment for the course

$\frac{IC}{N}$ = Cost per enrollee

$\sum_{+=1}^{n} \frac{IC}{N}$ = Semester instructional costs per enrollee

Total semester instructional costs were, of course, a mere accumulation of costs per course. The annual reports to the state contained teacher salary allotments per course. These costs were adjusted for estimated fringe benefits ranging from 112 percent in 1969-70 to 120 percent in 1972-73.

After the cost per enrollee was determined then it was mutliplied by the number of enrollees of the appropriate semester rank in the Agri-Business Program to arrive at a semester cost per course for the program (See Appendix). This process was repeated for each course for each semester from 1969-1973. Table 9 is a table of instructional costs by semester rank for the Agri-Business Program.

STUDENT OPPORTUNITY COSTS

The calculation of student opportunity costs was explained in the previous section on private economic costs. The societal economic costs, student opportunity costs are merely the sum of the individual opportunity costs. It was calculated by multiplying the student opportunity cost per enrollee by the number of enrollees. Tables 9A, B, C, and D show total student opportunity costs under the various assumptions as to adjusted mean income and summer earnings.

Table 10 shows the financial aid given to graduates of the Agri-Business Program. Only outright grants were included for consideration; loans and work-study were ignored; as was any interest subsidy on loans. The information was obtained from the financial aid office files at the District One Technical Institute.

TABLE 9A

Student Opportunity Costs* Adjusted for the Time Value of Money
For Agri-Business Program Enrollees, by Semester for the Years 1969-1973

	1969	1970	1970	1971	1971	1972	1972	1973
Adjusted Student Opportunity Costs	$ 1,245.10	$ 1,245.10	$ 1,175.39	$ 1,175.39	$ 1,296.55	$ 1,296.55		
No. of 1st and 2nd Semester Rank Enrollees	x 13	x 13	x 19	x 17	x 25	x 21		
	$16,186.30	$16,186.30	$22,331.41	$19,981.63	$32,413.75	$27,217.55		
Unadjusted Student Opportunity Costs			$ 1,119.42	$ 1,119.42	$ 1,234.81	$ 1,234.81	$ 1,401.66	$ 1,401.66
			x 11	x 10	x 10	x 8	x 12	x 12
			$12,313.62	$11,194.20	$12,348.10	$ 9,894.48	$16,819.92	$16,819.92

Cost of Agri-Business Class Graduating:

1971	$55,880.42		
1972		$64,556.62	
1973			$93,271.14

*The mean income of all males 18-24 completing 4 years of high school only and adjusted for labor force participation, unemployment, the time value of money, and reduced by expected summer earnings (10/52 x adjusted mean income of males 18-24 year round full-time workers).

TABLE 9B

Student Opportunity Costs* Adjusted for the Time Value of Money
For Agri-Business Program Enrollees by Semester for the Years 1969-1973

	1969	1970	1970	1971	1971	1972	1972	1973
Adjusted Student Opportunity Costs	$ 1,319.61	$ 1,319.61	$ 1,250.11	$ 1,250.01	$ 1,337.01	$ 1,337.32		
No. of 1st and 2nd Semester Rank Enrollees	x 13	x 13	x 19	x 17	x 25	x 21		
	$17,154.93	$17,154.93	$23,750.19	$21,250.17	$33,433.00	$28,083.72		
Unadjusted Student Opportunity Costs			$ 1,190.49	$ 1,190.49	$ 1,273.64	$ 1,273.64	$ 1,469.30	$ 1,469.30
No. of 3rd and 4th Semester Rank Enrollees			x 11	x 10	x 10	x 8	x 12	x 12
			$13,095.39	$11,904.90	$12,736.40	$10,189.12	$17,631.60	$17,631.60

Cost of Agri-Business Class Graduating:

1971	$59,310.15			
1972		$67,925.88		
1973				$96,779.92

*The mean income of all males 18-24 completing 4 years of high school only and adjusted for labor force participation, unemployment, the time value of money, and reduced by expected summer earnings (10/52 x adjusted mean income of same) was used.

TABLE 9C

Student Opportunity Costs* Adjusted for the Time Value of Money
For Agri-Business Program Enrollees, by Semester for the Years 1969-1973

	1969	1970	1970	1971	1971	1972	1972	1973
Adjusted Student Opportunity Costs	$ 2,220.50	$ 2,220.50	$ 2,082.51	$ 2,082.51	$ 2,171.27	$ 2,171.27		
No. of 1st and 2nd Semester Rank Enrollees	x 13	x 13	x 19	x 17	x 25	x 21		
	$28,866.50	$28,866.50	$39,567.69	$35,402.69	$54,281.75	$45,596.67		
Unadjusted Student Opportunity Costs			$ 1,983.35	$ 1,983.35	$ 2,067.88	$ 2,067.88	$ 2,237.48	$ 2,237.48
No. of 3rd and 4th Semester Rank Enrollees			x 11	x 10	x 10	x 8	x 12	x 12
			$21,816.85	$19,833.50	$20,678.80	$16,543.04	$26,849.76	$26,849.76

Cost of Agri-Business Class Graduating:

1971	$99,383.35		
1972		$112,192.20	
1973			$153,577.94

*The mean income of male year round full-time workers completing 4 years of high school only and adjusted for labor force participation, unemployment, the time value of money, and reduced by expected summer earnings (10/52 x adjusted mean income of male 18-24 year round full-time workers).

TABLE 9D

Student Opportunity Costs* Adjusted for the Time Value of Money
For Agri-Business Program Enrollees by Semester for the Years 1969-1973

	1969	1970	1970	1971	1971	1972	1972	1973
Adjusted Student Opportunity Costs	$ 2,749.21	$ 2,749.21	$ 2,578.33	$ 2,578.33	$ 2,688.21	$ 2,688.21		
No. of 1st and 2nd Semester Rank Enrollees	x 13	x 13	x 19	x 17	x 25	x 21		
	$35,739.73	$35,739.73	$48,988.27	$43,831.61	$67,205.25	$56,452.41		
Unadjusted Student Opportunity Costs			$ 2,455.55	$ 2,455.55	$ 2,560.20	$ 2,560.20	$ 2,770.14	$ 2,770.14
No. of 3rd and 4th Semester Rank Enrollees			x 11	x 10	x 10	x 8	x 12	x 12
			$27,011.05	$24,555.50	$25,602.00	$20,481.60	$33,241.68	$33,241.68
Cost of Agri-Business Class Graduating:								
1971				$123,046.01				
1972						$138,633.48		
1973								$190,141.02

*The mean income male year round full-time workers completing 4 years of high school only and adjusted for labor force participation, unemployment, the time value of money, and reduced by expected summer earnings (10/52 of adjusted mean income of all male workers 18-24).

TABLE 10

Societal Economic Cost of Financial Aid* of Agri-Business Program Graduates
By Semester, for Classes Graduating in 1971, 1972 and 1973

	1969	1970	1970	1971	1971	1972	1972	1973
Year of Graduation								
1971	$ 250.00	$ 250.00	$ 978.01	$ 978.01				
1972					$ 200.00	$ 200.00		
1973					1,574.88	1,574.88	$1,000.00	$1,000.00

*Financial aid excludes loans and work study, also it ignores any interest subsidy on the loans.

EQUIPMENT DEPRECIATION

To determine instructional equipment depreciation of equipment used in the Agri-Business Program shop and laboratory (Rooms W104 and M175) it is necessary first to obtain information as to (1) inventory (2) date of purchase (3) cost of equipment (4) economic life from an instructional point of view at time of purchase in semesters and (5) the percentage of the time the equipment is used by the Agri-Business Program. The basic model used to determine equipment depreciation costs is as follows:

$$\frac{h}{H} \quad \frac{C}{R} = E$$

Where:

h = hours equipment is used in Agri-Business Program

H = total hours of equipment use

C = cost of equipment

R = economic life from an instructional point of view in semesters at date of purchase

E = semester equipment depreciation cost

Pages show an inventory of equipment used in the Agri-Business Program, date of purchase, cost and estimated semester depreciation.

Page shows a breakdown of instructional equipment depreciation used in the Agri-Business Program by semester.

However, Agri-Business Program enrollees used more equipment than just that maintained in the Ag shop. Each course that they were required to take was given in a room that had some equipment in it, whether just a teacher's desk and lectern or several typewriters, etc. Even in those cases where the Agri-Business students did not use the equipment they must be charged with their proportionate share of the equipment depreciation since the holding of a class in that room prevented other simultaneous use of the equipment in the same room. To accomplish this it required an (1) inventory of equipment per room for each semester, 1969-1973, (2) cost of the equipment, (3) life expectancy of equipment at date of purchase, (4) percentage of time that the course occupies in that room. This resulted in the following formula:

$$\alpha \frac{C}{R} = E \quad \text{and} \quad \frac{E}{N} = \text{cost per enrollee}$$

Where:

α = percentage of the time the room is used by the course, i.e. hours per week course is taught in the room over total hours room is used per week

C = cost of the equipment

R = economic life of the equipment in semesters at date of purchase from an instructional point of view

E = depreciated cost of equipment per course per semester

N = course enrollment

Since different sections of the same course could be taught in different rooms this factor was adjusted for also. (See Appendix time utilization schedules by course) Of course, this procedure would duplicate the results obtained from the first method in the Ag shop rooms.

Due to the lack of inventory data showing equipment per room by semester prior to June, 1974, I was forced to abandon the determination of instructional equipment in Agri-Business Program classes (except as determined through the first method). However, I did determine what equipment depreciation costs would

have been if all the equipment existing as of June 6, 1974 were on hand in the same rooms during every semester from 1969-1973 (See Appendix). Except for some rooms which were later converted to other uses (such as drafting) the equipment depreciation costs would have been minimal.

The Agri-Business Program students must also share part of the non-instructional equipment depreciation, i.e. equipment used for maintenance, administration, ancillary and professional, etc. Since accurate inventory data did not exist prior to June, 1974 I constructed a schedule (see following page) of non-instructional equipment for the years 1969-1974 by using the June, 1974 figure and adjusting for purchases and retirements (replacement purchases) data obtained through the audit reports for fiscal years 1969-1974. Next, (see schedule, page) I prorated the Agri-Business Program share by multiplying the FTE percentage generated by the Agri-Business Program in each semester by the semester non-instructional equipment depreciation. (The semester equipment depreciation was based on average equipment on hand since I assumed that purchases occurred evenly throughout the fiscal year of acquisition) Note that the FTE percentages were adjusted to reflect appropriate enrollment in some semesters. A summary of both instructional and non-instructional equipment depreciation costs appear on the following pages.

INVENTORY OF EQUIPMENT USED IN THE AGRI-BUSINESS PROGRAM

Qty	Description	Est Purchase Date	Total Est Cost	÷ Est Instructional Life (in semester)	= Depr. Per Sem	x % used by Agri-Bus.	= Adjusted Semester Depreciation
1	Air Compressor (Devilibuss Tan 50 50)	71	680	30	22.67	33.3	7.55
1	Parts Washer (Gra Mills 300)	71	295	30	9.83	.500	4.92
2	Benches	70	300	30	10.00	1.00	10.00
1	Snap on Special Tool box w/large sockets	70	100	30	3.33	1.00	3.33
6	Snap on Tool boxes	70	641	30	21.36	1.00	21.36
1	Holgun 3/8" #643 B & D	70	64.30	30	2.14	1.00	2.14
1	Grinder #7307D Baldor 7" ½ Hp.	70	144.00	30	4.80	.750	3.60
1	Parts Cleaner (used) Kota Division	71	1500.00	30	50.00	.500	25.00
1	3/4 ton Walker Hoist #J816	71	409.00	30	13.63	1.00	13.63
1	Bench Grinder 1/3 HP	71	95.00	30	3.17	1.00	3.17
1	4 ton Floor Jack #J134	71	270.00	30	9.00	1.00	9.00
1	Rag Container 25-826	70	27.66	30	.92	1.00	.92
8	Jack stands J897	70	316.80	30	10.56	1.00	10.56
1	Microfiche Reader	73	300.00	30	10.00	.500	5.00
4	Cabinets homemade or free						
1	Drill Press	71	150.00	30	50.00	1.00	50.00
1	Vise	70	140.00	30	4.67	1.00	4.67
1	Visarecord	70	50.00	30	1.67	1.00	1.67

TABLE 11, Cont.

Qty	Description	Est Purchase Date	Total Est Cost	÷ Est Instructional Life (in semester)	= Depr. Per Sem	x % used by Agri-Bus.	= Adjusted Semester Depreciation
1	8' Counter	70	130	30	4.33	.500	2.17
6	Parts Cabinets	70	684	30	22.80	1.00	22.80
	Miscellaneous Tools		100	30	3.33	1.00	3.33
	TOTAL		7,746.76		258.27		204.83

Inventory Acquired (Calendar Year)

1970	2,697.76
1971	4,749.00
1973	300.00

Schedule of Agri-Business Program Estimated Equipment Depreciation by semester, assuming a 15 year Average Life, for the years 1969-1973.

	1969	1970	1970	1971	1971	1972	1972	1973
Depreciation on acquisitions in:								
Spring 1970		$44.96	$44.96	$ 44.96	$ 44.96	$ 44.96	$ 44.96	$ 44.96
Fall 1970			44.96	44.96	44.96	44.96	44.96	44.96
Spring 1971				79.15	79.15	79.15	79.15	79.15
Fall 1971					79.15	79.15	79.15	79.15
Spring 1973								5.00
Total	Indeterminable	$44.96	$89.92	$169.07	$248.22	$248.22	$248.22	$253.22
Adjustment to reflect 2nd semester rank enrollees only		x56.25%						
Adjustment to reflect 3rd & 4th semester rank enrollees only							x 35.29%	x 32.43%
Total		$25.29	$89.92	$169.07	$248.22	$248.22	$ 87.60	$ 82.12

Note: Pre 1970 acquisitions are unknown. Acquisition date are estimates from Mr. Irving Rounsville, instructor in the Agri-Business Program. Purchases were assumed to occur evenly throughout the calendar year of acquisition.

Schedule of Non-instructional equipment of District One Technical Institute for the years 1969-1974.

	1973-74	1972-73	1971-72	1970-71	1969-70
Total 6/30/74 (est)	$789987.96				
- Purchases	45657.22				
+ Replacement Purchases	5288.71				
Total 6/30/73		$749619.45			
- Purchases		44769.37			
+ Replacement Purchases		949.54			
Total 6/30/72			$705799.62		
- Purchases			18010.50		
+ Replacement Purchases			2709.95		
Total 6/30/71				$690499.07	
- Purchases				18000.00	
+ Replacement Purchases				1252.99	
Total 6/30/70					$673752.06
- Purchases					7346.00
+ Replacement Purchases					405.00
Total 6/30/69					$666811.06
Average Equipment during yr.	$769803.70	$727709.54	$698149.35	$682125.57	$670281.56

Sources: "Inventory Control Report; by room "Area Vocational Technical and Adult Education, District One & "Report on Statement of Cash Receipts & Expenditures" for fiscal years 1969-73, Area Vocational Technical & Adult Education, District One. The Bertleson Company Certified Public Accountants, Eau Claire.

TABLE 14

Schedule of Agri-Business Program's share of Estimated Non-instructional Equipment Depreciation by semester for the years 1969-1973.

	1969	1970	1970	1971	1971	1972	1972	1973
Ave. Non-instructional Equipment (15 yrs x 2 = 30--in semester)	$670281.56	$670281.56	$682125.57	$682125.57	$698149.35	$698149.35	$727709.54	$727709.54
÷ Estimated Remaining Life	30	30	30	30	30	30	30	30
Cost Per Semester	22342.72	22342.72	22737.52	22737.52	23271.65	23271.65	24256.98	24256.98
x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
Agri-Business Programs' share of Non-instructional Equipment Depreciation	446.85	469.20	522.96	522.96	511.98	558.52	582.17	630.68
Adjustment to reflect 1st & 2nd rank only	x 52%	x 56.52%						
Adjustment to reflect 3rd & 4th rank only							x 35.29%	x 32.43%
Totals	$ 232.36	$ 265.19	$ 522.96	$ 522.96	$ 511.98	$ 558.52	$ 205.50	$ 204.53

Schedule of Agri-Business Program's Share of Non-instructional Equipment Depreciation & Estimated Agri-Business Program's Instructional Equipment Depreciation by semester for the years 1969-1973.

	1969	1970	1970	1971	1971	1972	1972	1973
Non-Instructional Equipment Depreciation	$232.36	$265.19	$522.96	$522.96	$511.98	$558.52	$205.50	$204.53
Instructional Equipment Depreciation (used in Agri-Business program)		23.38	89.92	169.07	248.21	248.21	139.63	142.46
Total	$232.36	$288.57	$612.88	$692.03	$760.19	$806.13	$345.13	$346.99

BUILDING DEPRECIATION

To determine the Agri-Business Program's share of instructional rooms building depreciation, I used the following formula:

$\alpha S \frac{B}{R} = E$ and $\frac{E}{N}$ = cost per enrollee

Where:

α = the percentage of time the room is used by the course, i.e. hours course is taught in room during week over total hours the room is used

S = percentage of space utilized, i.e. space in room the course is taught in over total space in building

B = cost of building plus remodeling since construction

R = economic life of building

E = semester depreciation

N = enrollment in course

A space utilization schedule of rooms used each semester was prepared (see Appendix). Also a time utilization schedule was prepared (see Appendix). A 50-year life (100 semesters) was estimated for the building. A depreciation schedule which reflects both original construction, building, additions, and remodeling costs appears on the following page.

TABLE 15

Depreciation Schedule by semester for the main building, assuming a 50 year life,--District One Technical Institute for the years 1969-1973.

	1969	1970	1970	1971	1971	1972	1972	1973
Original Bldg. (1961)	$ 3859.94	$ 3859.94	$ 3859.94	$ 3859.94	$ 3859.94	$ 3859.94	$ 3859.94	$ 3859.94
Addition (1967)	35000.00	35000.00	35000.00	35000.00	35000.00	35000.00	35000.00	35000.00
Remodeling								
1969-70	32.26	32.26	32.26	32.26	32.26	32.26	32.26	32.26
1970-71			312.05	312.05	312.05	312.05	312.05	312.05
1971-72					308.25	308.25	308.25	308.25
1972-73							173.73	173.73
Total	$38892.20	$38892.20	$39204.25	$39204.25	$39512.50	$39512.50	$39686.23	$39686.23

Source: Mr. Norbert K. Wurtzel, Assistant Director-Administrative Services, District One Technical Institute. Also "Report on Statement of Cash Receipts and Expenditures with Supplementary Data" for Fiscal Years 1969-1973 Area Vocational Technical and Adult Education District One, The Bertleson Company Certified Public Accountants, Eau Claire, WI.

Next, following the above formula instructional rooms building depreciation costs were computed for each course and each semester from 1969-1973 (see Appendix). From this data, Table 16, which shows instructional rooms building depreciation costs by semester rank, was prepared.

In order to determine non-instructional building depreciation costs, first I had to subtract instructional space from total building space and divide by total space to obtain the percentage of the building space used for non-instructional purposes. Next I multiplied the non-instructional space percentage by total semester building depreciation to arrive at total non-instructional building depreciation. To determine the Agri-Business Program's share of semester non-instructional depreciation I multiplied total semester non-instructional building depreciation by the percentage of total school FTE's generated by the Agri-Business Program enrollees and adjusted where necessary.

The formula used:

$$f \quad \frac{S - I}{S} \quad \frac{B}{R} \quad = \quad N$$

Where:

f = FTE% generated by Agri-Business Program enrollees

S = total space in building

I = total space used for instructional purposes

B = cost of the building plus remodeling

R = estimated economic life of the building

N = Agri-Business Program's share of the semester cost of non-instructional building depreciation

A summary of instructional and non-instructional building depreciation costs appear on the following page.

TABLE 16A

Instructional Building Depreciation Costs for Agri-Business Program Enrollees, By Semester Rank, for the Years 1969-1973

	1969	1970	1970	1971	1971	1972	1972	1973
Instructional Costs:								
Semester Rank								
1st	$76.44		$353.78		$576.75			
2nd		$272.22		$579.03		$429.03		
3rd			$39.49		$50.30		$64.44	
4th				$70.80		$46.32		$47.40
1971 Class				$458.95				
1972 Class						$1029.43		
1973 Class								$1117.62

TABLE 10B

Agri-Business Program's share of Main Building Depreciation Costs for Administration, Ancillary & other Non-Instructional Cost Categories by semester for the years 1960-1973.

	1969	1970	1970	1971	1971	1972	1972	1973
Total Depr.	$38892.20	$38892.20	$39204.25	$39204.25	$39512.50	$39512.50	$39686.23	$39686.23
% age space used for non-instructional purposes	x 53.8%	x 53.8%	x 53.8%	x 53.8%	x 53.8%	x 53.8%	x 53.8%	x 53.8%
Total non-instructional Depr.	$20924.00	$20924.00	$21091.89	$21091.81	$21257.73	$21257.73	$21351.19	$21351.19
FTE & of Agri-Business Enrollees	x 1.04%	x 1.12%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x .85%	x .84%
Total non-instructional Depr. associated with Agri-Business Program	$ 217.61	$ 234.35	$ 485.11	$ 485.11	$ 467.67	$ 510.19	$ 181.49	$ 179.35

Summary Table of: Instructional & non-instructional Building Depreciation Costs by semester for the Agri-Business Program for the years 1969-1973.

	1969	1970	1970	1971	1971	1972	1972	1973
Non-Instructional Depr.	$217.61	$234.35	$485.11	$ 485.11	$ 467.67	$510.19	$181.49	$179.35
Instructional Depr.:								
1 & 2 Semester Rank	76.44	272.22	353.78	579.03	576.75	429.03		
3 & 4 Semester Rank			39.49	70.80	50.30	46.32	64.44	47.40
Total	$294.05	$506.57	$878.38	$1134.94	$1094.72	$985.54	$245.93	$226.75

Note: FTE%'s were adjusted (to 52% and 56.25% respectively of original totals) in 1969-70 semesters in order to reflect costs associated with 1st and 2nd semester rank enrollees only. FTE%'s were adjusted (to 35.29% and 32.43% respectively of original totals) in 1972-73 semesters in order to reflect costs associated with 3rd and 4th semester rank enrollees only.

TABLE 17

Schedule of Total FTE's in Agribusiness Program by semester for the years (Fall) 1969-1973 (Spring).*

1st Semester (Fall)	1969	1970	1971	1972	1973
Total FTE	1377	1466	1693	1906	
Agribusiness FTE	27.40	33.47	37.13	47.47	
% in Agribusiness	2%	2.3%	2.2%	2.5%	
2nd Semester (Spring)					
Total FTE		1214	1408	1583	1762
Agribusiness FTE		25.07	32.60	38.73	46.40
% in Agribusiness		2.1%	2.3%	2.4%	2.6%

Schedule of Total FTE's in Agribusiness Program for Summer Session for the years 1969-1972 (FTE's).*

	1969	1970	1971	1972
Total	111.53	112.17	123.23	179.76
Agribusiness	.93	.60	.35	1.20

*Data obtained from Mr. Norbert Wurtzel, Assistant Director-Administrative Services, of the Area Vocational Technical and Adult Education District One.

Table 17 shows the FTE's generated by Agri-Business Program enrollees for each semester for the years 1969-1973. The schedule that follows it shows total FTE's generated by the Agri-Business Program enrollees during the summers of 1969-1972. Based on the minimal amounts generated by the program and in total during the summer relative to the spring and fall semesters, I assumed that all cash expenditures for categories 6-15 were incurred evenly between the fall and spring semesters

It should be noted that District One Technical Institute employs the cash basis method of accounting. Consequently, book expenses and revenues may be either under or overstated for any given year when compared with results under accrual basis of accounting. However, the effect of an understatement (overstatement) of expenses in any one year is offset by overstatement (understatement) of expenses the following year when the expense is paid (incurred).

Ancillary and Professional General Formula:

$$f \quad \frac{A - [(P + T + S)]}{2} \quad + \alpha C \quad = \quad AP$$

Where:

f = percentage FTE's generated by Agri-Business Program enrollees

A = total ancillary and professional cash expenditures as per audit report

P = professional salaries full-time program

T = total coordinators salaries - other programs

S = supervisors - other programs costs

α = percentage of time spent by coordinator on the Agri-Business Program

C = Agri-Business Program Coordinator total salary adjusted for fringe benefits

AP = adjusted ancillary and professional cash expenditures

Using this formula ancillary and professional costs were computed (see following page) on a semester basis.

Debt Service General Formula:

$$f \quad \frac{[D - P]}{2} \quad = \quad DS$$

Where:

f = percentage of FTE's generated by Agri-Business Program enrollees

D = total debt repayment interest and principal

P = repayment of principal

DS = adjusted debt service and cash expenditure

In order to conform to generally accepted accounting theory, the debt services cash expenditures was reduced by repayments of principal. This was necessary as repayment of principal is never considered an expense. Table 19 shows the adjustment of the Debt Service Account.

TABLE 18

Ancillary and Professional Cash Expenditures As Adjusted to Exclude Non-Agri-Business Program Coordinators Salaries-Full-Time Programs, Total Coordinators-Other Programs, Supervisors-Other Programs Costs

	1969	1970	1970	1971	1971	1972	1972	1973
A & P (before adj.)	$181,629.57	$181,629.57	$268,944.85	$268,944.85	$339,319.00	$339,319.00	$439,745.00	$439.745.00
Less:								
(1) Prof. Salaries	$ 23,716.95	$ 23,716.95	$ 42,263.63	$ 42,263.63	$ 58,761.53	$ 58,761.53	$ 53,441.93	$ 53,441.93
(2) Total Coord.	30,892.48	30,892.48	59,990.43	59,990.43	66,904.82	66,904.82	83,129.18	83,129.18
(3) Supervision	3,846.10	3,846.10	3,568.13	3,568.13	6,262.13	6,262.13	9,301.18	9,301.18
TOTAL	$ 58,455.53	$ 58,455.53	$105,822.19	$105,822.19	$131,933.48	$131,933.48	$145,872.29	$145,872.29
DIFFERENCE	$123,174.04	$123,174.04	$163,121.81	$163,121.81	$207,386.00	$207,386.00	$293,873.00	$293,873.00
X (FTE % in Agri-Bs)	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
TOTAL	$ 2,463.48	$ 2,586.66	$ 3,751.80	$ 3,751.80	$ 4,562.49	$ 4,977.26	$ 7,052.95	$ 7,640.74
Agri-Bus. Coord.*[1]	1,746.17	1,746.17	1,910.72	1,910.72	2,071.21	2,071.21	2,155.12	2,155.12
TOTAL A & P (Agr-Bs.)	$ 4,209.65	$ 4,322.83	$ 5,662.52	$ 5,662.52	$ 6,633.70	$ 7,048.47	$ 9,208.07	$ 9,795.86

Data was obtained from Area Vocational, Technical and Adult Education District One. "Report on Statement of Cash Receipts and Expenditures with Supplementary Data", The Bertleson Company, CPA's, FY 1969-1973.

*[1]According to Henry Schank, Accountant of District One VTAE, the Agri-Business Coordinator's salary was as follows:

	1969-70	1970-71	1971-72	1972-73
Coordinator's Base Salary	$12,472.62	$13,291.95	$14,042.10	$14,367.42
Fringe Benefits (est.)	x 112%	x 115%	x 118%	x 120%
Salary with fringes	$13,969.33	$15,285.74	$16,569.68	$17,240.90
Coordination Time on Ag Program	x 25%	x 25%	x 25%	x 25%
	$ 3,492.33	$ 3,821.44	$ 4,142.42	$ 4,310.23

TABLE 19

Showing Adjustment of Debt Service Account
To Exclude Repayment of Principal for the Fiscal Year 1969-1973

	1969-70	1970-71	1971-72	1972-73
Before adj.	$270,285.08	$354,026.29	$346,206.82	$349,056.44
Less Principal Repay.	145,000.00	175,000.00	175,000.00	178,043.01
Adjusted	$125,285.08	$179,026.29	$171,206.82	$171,013.43
÷ 2	62,642.54	89,513.15	85,603.41	85,506.72
X FTE % 1st Sem.	x 2.0%	x 2.3%	x 2.2%	x 2.4%
Adj. Agri-Bus.	$ 1,252.85	$ 2,058.80	$ 1,883.28	$ 2,052.16
2nd Sem.	62,642.54	89,513.15	85,603.41	85,506.72
FTE Agri-Bus.	x 2.1%	x 2.3%	x 2.4%	x 2.6%
Adj. Agri-Bus.	$ 1,315.49	$ 2,058.80	$ 2,054.48	$ 2,223.17

Data obtained from Area Vocational, Technical and Adult Education District One, "Report on Statement of Cash Receipts and Expenditures with Supplementary Data", FY 1969-1973, The Bertleson Company, Certified Public Accountant, Eau Claire, Wisconsin.

To compute administration at the local level, operation and maintenance, transportation, fixed charges, transfers to clearing accounts, outgoing transfers account, school sales (net expenditures), and food services (net receipts or net expenditures), cash expenditures the following formula was used:

$$f \quad \frac{(\$AM + \$OM + \$TP + \$FC + \$TC + \$OT + \$SS + \$FS)}{2} = \text{Agri-Business Program share of the semester cost}$$

Where:

f = percentage of FTE's generated by Agri-Business Program enrollees

AM = administration cash expenditures

OM = operation and maintenance cash expenditures

TP = transportation cash expenditures

FC = fixed charges

TC = transfers to clearing accounts

OT = outgoing transfer account

SS = school sales net expenditures

FS = food service net receipts or net expenditures

A schedule of computations which appears on the following page shows the Agri-Business Program's share of the above costs. Again, note the totals were adjusted in some semesters. A summary table of these costs by semester is presented on page .

TABLE 20

Computations Schedule of Agribusiness Program's Share of Administration et al costs for the years 1969-73.

		1969	1970	1970	1971	1971	1972	1972	1973
(1)	Administration	$65267.94	$65267.94	$61392.38	$61392.38	$82251.86	$82251.86	$94669.79	$94699.79
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	Administration Cost	$ 1305.36	$ 1370.63	$ 1412.03	$ 1412.03	$ 1809.54	$ 1974.05	$ 2272.08	$ 2461.42
(2)	Ancillary & Professional (Adj)	$123174.04	$123174.04	$163121.81	$163121.81	$207386.00	$207386.00	$293873.00	$293873.00
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
		$ 2463.48	$ 2586.66	$ 3751.80	$ 3751.80	$ 4562.49	$ 4977.26	$ 7052.95	$ 7640.74
	+ Agri-Business Coordinator's salary, Ancillary & Professional Cost	1746.17	1746.17	1910.72	1910.72	2071.21	2071.21	2155.12	2155.12
		$ 4209.65	$ 4322.83	$ 5662.52	$ 5622.52	$ 6633.70	$ 7048.47	$ 9208.07	$ 9795.80
(3)	Operation & Maintenance of Plant	$115501.88	$115501.88	$141739.27	$141739.27	$144583.44	$144583.44	$166560.49	$166560.49
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	O & M of Plant Cost	$ 2310.04	$ 2362.54	$ 3260.00	$ 3260.00	$ 3180.84	$ 3470.00	$ 3997.45	$ 4330.57
(4)	Transportation	$1028.80	$1028.80	$ 965.20	$ 965.20	$2754.86	$2754.86	$2331.63	$2331.63
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	Transportation Cost	$ 20.58	$ 21.61	$ 22.20	$ 22.20	$ 60.61	$ 66.12	$ 55.96	$ 60.62
(5)	Fixed Charges	$97357.38	$97357.38	$60760.00	$60760.00	$104346.02	$104346.02	$161399.54	$161399.54
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	Fixed Charges Cost	$ 1947.15	$ 2044.51	$ 1397.48	$ 1397.48	$ 2295.61	$ 2295.61	$ 3873.59	$ 4196.39
(6)	Transfers to Clearing Accts	$6340.31	$6340.31	$5637.31	$5637.31	$12234.76	$12234.76	$19289.13	$19289.13
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	T.C.A. Cost	$ 126.81	$ 133.15	$ 129.66	$ 129.66	$ 269.17	$ 293.63	$ 462.94	$ 501.52
(7)	Outgoing Transfer Acct	$20634.71	$20634.71	$11033.67	$11033.67	$28278.92	$28278.92	$37235.44	$37235.44
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	O.T.A. Cost	$ 412.69	$ 433.33	$ 253.77	$ 253.77	$ 622.14	$ 678.69	$ 893.65	$ 968.12
(8)	Debt Service (Adj)	$62642.54	$62642.54	$89513.15	$89513.15	$85603.41	$85603.41	$85506.72	$85506.72
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	Debt Service Cost	$1252.85	$1315.49	$2058.80	$2058.80	$1883.28	$2054.48	$2052.16	$2223.17

TABLE 20, Cont.:

		1969	1970	1970	1971	1971	1972	1972	1973
9)	School Sales (Net Expenditures)	$5854.03	$5854.03	$1850.42	$1850.42	$4564.98	$4564.98	$11591.91	$11591.91
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	School Sales Cost	$ 117.08	$ 122.94	$ 42.56	$ 42.56	$ 100.43	$ 109.56	$ 278.21	$ 301.39
(10)	Food Service (Net Receipt) Net Expenditure	$728.65	$728.65	$2924.11	$2924.11	$2514.27	$2514.27	$4984.46	$4984.46
	x FTE% in Agri-Business	x 2%	x 2.1%	x 2.3%	x 2.3%	x 2.2%	x 2.4%	x 2.4%	x 2.6%
	Food Service Cost (or Receipts)	($ 14.57)	($ 15.30)	($ 67.26)	($ 67.26)	($ 55.31)	($ 60.34)	$ 119.63	$ 129.60

TABLE 21

Summary Table of Administrative, Ancillary & Professional Cash Expenditures et al (also at local level) by semester for the Agri-Business Program for the years 1969-1973.

		1969	1970	1970	1971	1971	1972	1972	1973
(1)	Administration	$ 1305.36	$ 1370.63	$ 1412.03	$ 1412.03	$ 1809.54	$ 1974.05	$ 2272.08	$ 2461.42
(2)	Adj. A & P	4209.65	4322.03	5622.52	5662.52	6633.70	7048.47	9208.07	9795.83
(3)	Oper. & Maint.	2310.04	2362.54	3260.00	3260.00	3180.84	3470.00	3997.45	4330.57
(4)	Transp.	20.58	21.61	22.20	22.20	60.61	66.12	55.96	60.62
(5)	Fixed Charges	1947.15	2044.51	1397.48	1397.48	2295.61	2504.30	3873.59	4196.39
(6)	Trsfrs to Cleaning Acct. Acct.	126.81	133.15	129.66	129.66	269.17	293.63	462.94	501.52
(7)	Outgoing Trsfr Acct.	412.69	433.33	253.77	253.77	622.14	678.69	893.65	968.12
(8)	Debt Svc.	1252.85	1315.49	2058.80	2058.80	1883.28	2054.48	2052.16	2223.17
(9)	School Sales	117.08	122.94	42.56	42.56	100.43	109.56	278.21	301.39
+(10)	Net Expenditures Food Svc.							119.63	129.60
-(10)	Net Receipts Food Svc.	14.57	15.30	67.26	67.26	55.31	60.34		
		$11687.64	$12111.73	$14131.76	$14131.76	$16800.01	$18138.96	$23213.75	$24968.63
	Adj. to reflect only 1st & 2nd semester rank students	X 52%	X 56.52%						
	Adj. to reflect only 3rd & 4th semester rank students							X 35.29%	X 32.43%
	TOTALS	$ 6077.57	$ 6845.55	$14131.76	$14131.76	$16800.01	$18138.96	$ 8192.13	$ 8097.33

STATE ADMINISTRATION

The calculation of the Agri-Business Program's share of state VTAE administration costs entailed the following: first, obtaining total FTE's generated in the state and second, the Agri-Business Program's share of FTE's generated (See Table 22). Next, the total state VTAE administration costs were obtained and reduced by an adjustment to eliminate administration costs associated with MDTA and Adult Education Programs. Further it reduced to 80 percent the previous difference in order to show administration costs of full-time programs. Table 23A shows the calculations described above that were necessary to arrive at the Agri-Business Program's share of state administration costs. Table 23B is a summary of societal economic costs per Agri-Business class excluding student opportunity costs.

TABLE 22

Schedule of FTE's in District One VTAE Agri-Business Program and Total FTE's Generated in the State of Wisconsin's Post Secondary Vocational Schools for the Years 1969-1973*3

	1969	1970	1971	1972	1973
1st Semester (Fall)					
Agri-Business*1	27.40	33.47	37.13	47.47	\\\\\\\
Total FTE's *2	23548	26444	31345	43925	///////
% FTE in Agri	.11636%	.12657%	.11846%	.10807%	\\\\\\\
2nd Semester (Spring)					
Agri-Business	\\\\\\\	25.07	32.60	38.73	46.40
Total FTE's	///////	23548	26444	31345	43925
% FTE in Agri-Bus.	\\\\\\\	.10646%	.12328%	.12356%	.10563%

Sources:

*1 Mr. Norbert Wurtzel, Assistant Director for Administrative Services, District One VTAE Institute

*2"Full-Time Post-Secondary Enrollments for Fall Semester of the Years 1969-71", Wisconsin System of VTAE for the 1972-73 FY; "Total FTE's Generated by the VTAE Districts, FY 1972-73". Both were obtained from Mr. Wayne R. Atkins, Assistant Director for Research and Planning of District One VTAE.

*3 (Assumption that fall semester FTE's = Spring FTE's)

TABLE 23A

Schedule of Agri-Business Program Share of State VTAE Board Administration Costs As Adjusted for the Years 1969-1973

	1969		1970		1970		1971
State Admin. Costs*[1]	$376,105.60		$376,105.60		$419,263.60		$419,263.60
X % FTE in Agri over Total FTE's	.06050%	X	.070689%	X	.12657%	X	.12328%
Cost Per Semester	$227.57		$265.87		$530.66		$516.87

	1971		1972		1972		1973
State Admin. Costs*[1]	$576,640.00		$576,640.00		$726,720.00		$726,720.00
X % FTE in Agri over Total FTE's	.11846%	X	.12356%	X	.04360%	X	.03426%
Cost Per Semester	$683.09		$712.50		$316.88		$248.95

*[1]Administrative Costs were obtained from Gerald Lindas, Fiscal Supervisor, Wisconsin Board VTAE. These costs were determined by taking total administrative costs for each fiscal year given below and subtracting $150,000 from each total, this amount representing MDTA and Adult Education Management. This difference was then multiplied by 80%, the percentage of administrative funds spent on full-time programs.

FY	1969-70	1970-71	1971-72	1972-73
	$1,090,264	$1,198,159	$1,589,100	$1,966,800
MDTA & AE	-150,000	-150,000	-150,000	-150,000
	$ 940,264.00	$1,048,159.00	$1,439,100	$1,816,800
Time Spent FT	x 80%	x 80%	x 80%	x 80%
	$ 752,211.20	$ 838,527.20	$1,151,280	$1,453,440
÷ 2				
Per Sem.	$ 376,105.60	$ 419,263.60	$ 575,640	$ 726,720

Note: FTE%'s were adjusted (to 52% and 56.25% of original totals) in 1969-70 semesters in order to reflect costs associated with 1st and 2nd semester rank enrollees only. FTE percent's were adjusted (to 35.29% and 32.43% of original totals) in 1972-73 semesters in order to reflect costs associated with 3rd and 4th semester rank enrollees only.

TABLE 23B

SOCIETAL ECONOMIC COSTS* ADJUSTED FOR
THE TIME VALUE OF MONEY**, BY SEMESTER, FOR
THE AGRI-BUSINESS PROGRAM FOR THE YEARS 1969-1973

	1969	1970	1970	1971	1971	1972	1972	1973
Adjusted**:								
Costs associated with 1st & 2nd semester rank enrollees	$11,664.41	$12,491.90	$15,768.15	$16,439.94	$23,192.05	$22,808.87		
Unadjusted:								
Costs associated with 3rd & 4th semester rank enrollees			9,856.20	9,444.66	9,114.91	8,982.33	$12,706.49	$12,573.88
Cost for classes graduating in:								
1971				43,457.17				
1972						50,305.33		
1973								71,281.29

*Excluding student opportunity costs

**A 5% rate was used

CHAPTER THREE

PRIVATE AND SOCIETAL ECONOMIC BENEFITS

SOCIETAL ECONOMIC BENEFITS AND PRIVATE ECONOMIC BENEFITS

As explained earlier, societal economic benefits differ from private economic benefits only in that the former are computed gross of income taxes while the latter are net of such taxes. In this section of the report I attempt to determine societal economic benefits and private economic benefits and then finally combine societal economic benefits with societal economic costs and private economic benefits with private economic costs to determine benefit cost ratios.

The average monthly salary Agri-Business Program enrollees could expect to earn six to nine months after graduation varied from $506 in 1971 to $536 in 1973 (See Table 24). The average weekly hours they could expect to work, which showed a marked downward trend, varied from 55 hours in 1971 to 44 hours in 1973. (See Table 24)

Wages are essentially a function of the wage per hour and the number of hours worked per week. In order to compare the earnings of an Agri-Business graduate to that of a high school graduate, it is necessary to deflate the earnings of the Agri-Business graduate to account for the difference in earnings due to the additional hours worked. Two assumptions were made concerning the base weekly hours to use. Under the first assumption (Case 1) the average weekly hours of production and nonsupervisory workers on non-agricultural payrolls were assumed to approximate those worked by the high school graduate. Under the second assumption (Case 2) average full-time hours were assumed to be 40 hours per week. Table 25A shows estimated deflators using both methods. Table 25B shows deflated average monthly salaries for Agri-Business Program classes graduating in 1971, 1972 and 1973.[1]

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[1]It should be noted that average monthly earnings do not reflect any overtime premium earned, consequently it was not necessary to adjust the deflators for overtime premiums.

An argument against the use of deflators is that high school as well as technical institute graduates would like to work overtime in order to make more money. Thus; (1) the opportunity to work overtime is a benefit desired by workers at that end of the pay scale, and (2) high school graduates do not have that opportunity. Consequently, deflators should not be used.

While I cannot agree with the argument to exclude deflators, I would agree that the ability to work full-time is a definite advantage over being able to work part-time only. Therefore, if the mean income of all males workers reflects less than full-time hours worked (i.e. average weekly hours worked of all workers are less than full-time) it would not be necessary to deflate the earnings of the Agri-Business Program graduates beyond full-time.

TABLE 24

Average Salary per Month and Average Hours Worked Weekly of Technical Institute Agri-Business Program Graduates for the Years 1971-1973*

	1971	1972	1973
Monthly Salary:			
Range	324.75-588.85*[1]	473-600	300-752
Average	506.43*[3]	521	536*[2]
Hours Worked Weekly			
Average	55	49	44

*See follow-up studies for 1971, 1972, 1973.

*[1]Statistics for 1971 were given on a weekly basis. They were adjusted by multiplying the weekly figure by $4.33\left(\frac{52}{12}\right)$ the average number of weeks in a month.

*[2]Shows only those employed in job related fields. Those employed outside field of training - their salaries are not substantially different.

*[3]Estimated average monthly salary range only was given in follow-up study for 1971. A growth rate of 2.88% was assumed (the 2.88% is the growth rate for 1972-73).

TABLE 25A
Average Weekly Hours of Technical Institute Agri-Business Program Graduates for 1971-1973 and Estimated Deflators

	1971	1972	1973
Average Weekly Hours*1	55	49	44
Case 1 High School Graduates Wkly hrs*2	37	37.2	37.1
Case 2 High School Graduates Wkly hrs*3	40	40	40
Deflators Case 1	1.487	1.317	1.186
Deflators Case 2	1.375	1.225	1.10

*1Follow-up studies for 1971, 1972, 1973.

*2Gross Average hours & earnings of production or nonsupervisory workers on private nonagricultural payrolls Monthly Labor Review 1974.

*3Assumes high school graduates work 40 hours per week.

*4Deflators adjust for differences in earnings due to additional hours worked.

TABLE 25B
Deflator Adjusted Earnings of Technical Institute Agri-Business Program Graduates for 1971-1973

	1971	1972	1973
Average Monthly Earnings before adjustment*1	506.42	521	536
Deflator Case 1	1.487	1.317	1.186
Adjusted Earnings	340.56	395.60	451.93
Average Monthly Earnings before adjustment	506.42	521	536
Deflator Case 2	1.375	1.225	1.10
Adjusted Earnings	368.31	425.31	487.27

*1See follow-up studies for 1971, 1972, 1973.

*2See table of Deflators above.

Table 26 shows the monetary growth rates in starting salaries (six to nine months on the job) of Agri-Business Program graduates and the rate of inflation during the same period.

TABLE 26
Growth Rates in Starting Salaries of Agri-Business Program Graduates of Classes Graduating in 1971-1973

	1971		1972		1973
Salary (Unadjusted average monthly salary)	$506.42		$521.00		$536.00
Growth Rate		2.88%		2.88%	
Salary (Adjusted for Deflator 1)	340.56		395.60		451.93
Growth Rate		16%		14%	
Salary (Adjusted for Deflator 2)	368.31		425.31		487.27
Growth Rate		15.5%		14.5%	
Inflation Rate		3.3%		6.2%	

The reason for the tremendous difference between unadjusted average salary growth rates and deflator adjusted average salary growth rates, is the increase in salary that results from shorter hours worked per week and increasing starting salary. Working hours per week were 55 in 1971 and had declinded to 49 in 1972 and 44 in 1973.

Schedule of Consumer Price Index and Purchasing Power of the 1967-72 Consumer Dollar*

	1967	1968	1969	1970	1971	1972
Consumer Price Index	100	104.2	109.8	116.3	126.3	125.3
Purchasing Power	1.000	.960	.911	.860	.824	.799

*Table G5 "Consumer Price Index for Urban Wage Earners and Clerical Workers for Selected Groups and Purchasing Power of the Consumer Dollar" Manpower Report of the President 1973.

Table 27 shows the real (inflation adjusted) growth rates in starting salaries when using deflators and not. The average real growth rate for the three year period under either deflator method is about 10 percent. It is probably reasonable to assume that all levels of machinery partsman-salesman positions advanced in pay as the starting level earnings rose. This condition usually exists as higher level (and paid) workers react to maintain the gap in pay that separates them from starting level workers. Due to this reason, data limitations on graduates' earnings, and a time horizon that was extremely short, five years; I assumed a 10 percent growth rate.

TABLE 27
Real Growth Rates in Starting Salaries of Agri-Business Program Graduates of Classes Graduating in 1971-1973

	1971	1972	1973
Growth Rate (Unadjusted Salary)	2.88%	2.88%	
Inflation Rate	3.30%	6.20%	
Real Growth Rate	-1.42%	-3.32%	
Growth Rate (Deflator 1)	16.0%	14.0%	
Inflation Rate	3.3%	6.2%	
Real Growth Rate	12.7%	7.8%	
Growth Rate (Deflator 2)	15.5%	14.5%	
Inflation Rate	3.3%	6.2%	
Real Growth Rate	11.2%	8.3%	

Correspondingly, Table 28 shows the real growth rate in mean income of male year round full-time workers, for a six-year period. It should be noted it has averaged only about two percent during that period. This rate was employed to project future mean income of male year round full-time workers.

TABLE 28

Real Growth Rates in Mean Annual Income in Current Dollars of Male Year Round Full-Time Workers Age 18-24 with 4 Years of High School Completed for the Years 1967-1972

	1967	1968	1969	1970	1971	1972
Mean Annual Income*1	$5091.00	$5438.00	$6157.00	$6493.00	$6393.00	$6927.00
Growth Rate		6.8%	13.2%	5.5%	-1.6%	8.4%
Inflation Rate*2		4.2%	5.4%	5.9%	4.3%	3.3%
Real Growth Rate		+2.6%	+7.8%	-.4%	-5.9%	+5.1%

1967-72 Average Real Growth Rate . . . . .+1.8%

*1"Table 5 Mean Income in 1967 to 1972 of Male Year Round Full-Time Workers, by selected Age Group and years of school ccmpleted" U.S. Bureau of the Census, Current Population Reports, Series P-60 No. 92, "Annual Mean Income, Lifetime Income, and Educational Attainment of Men in the United States, for selected years, 1956 to 1972," U.S. Government Printing Office, Washington, DC 1974.

*2"Table 25 Consumer and Wholesale Price Indexes, annual averages and changes, 1951-73". Monthly Labor Review, U.S. Department of Labor U.S. Government Printing Office, Washington, DC April, 1974.

Table 29 shows the real growth rate of all male workers 18-24. The average real growth rate during the six year period was approximately two percent. This rate was employed to project the future mean income of all male workers.

TABLE 29

Real Growth Rates in Mean Annual Income, In Current Dollars
Of Men Age 18-24 with 4 Years of High School Completed for the Years 1967-1972

	1967	1968	1969	1970	1971	1972
Mean Annual Income*1	$3491.00	$3674.00	$3989.00	$4172.00	$4195.00	$4837.00
Growth Rate		5.2%	8.6%	4.6%	.6%	15.3%
Inflation Rate*2		4.2%	5.4%	5.9%	4.3%	3.3%
Real Growth Rate		1%	3.2%	-1.3%	-3.7%	12.0%
1967-72 Average Real Growth Rate		2.2%				

*1 Table 2 Mean Income in 1956 to 1972 of men, by selected age group and years of school completed. U.S. Bureau of the Census, Current Population Reports, Series P-60 No. 92, "Annual Mean Income, Lifetime Income, and Educational Attainment of Men in the United States, for selected years, 1956 to 1972," U.S. Government Printing Office, Washington, DC 1974.

*2 Table 25 Consumer and Wholesale Price Indexes, annual averages and changes, 1951-73. U.S. Department of Commerce "Monthly Labor Review" U.S. Government Printing Office, Washington, DC April, 1974.

In order to compute the earnings an Agri-Business Program graduate could expect; future earnings must be: (1) increased by the anticipated growth rate (as determined above); (2) adjusted for the probability of labor force participation by the graduate; and (3) the probability of the Agri-Business Program graduate's employment. Table 30 shows actual and projected labor force participation and unemployment rates for Agri-Business Program graduates, assuming a five year time horizon.

Actual & Projected Labor Force Participation Rates & Umemployment Rates for Agri-Business Program Graduates 1971-73.

Classes Graduating:	1971		1972		1973		1974		1975		1976		1977	
	LFPR	UN	LFPR	UN	LFPR	UN	LFPR	UN	LFPR	UN	LFPR	UN	LFPR	UN
1971	91%	10%	100%	0%	93.8%	13%	94.3%	9.1%	94.3%	9.1%				
1972			100%	0%	93.8%	13%	94.3%	9.1%	94.3%	9.1%	94.3%	9.1%		
1973					93.8%	13%	94.3%	9.1%	94.3%	9.1%	94.3%	9.1%	94.3%	9.1%

Note: Actual data is encircled. For 1971-1973 LFPR's and unemployment rates of previous classes were assumed to be the same as that year's graduating class rates. For 1974-1977 projected LFPR's were computed by taking the total Labor Force Participants of the three graduating classes over total graduates 33/55 = LFPR of 94.3%. Projected unemployment rates were computed by taking total unemployed graduates of the three graduating classes over total Labor Force Participants = 3/33 = Unemployment rate of 9.1%.

It is also necessary to adjust the earnings of a high school graduate for labor force participation and unemployment. Table 31A shows adjusted mean income of a year round full-time worker, assuming a two percent growth rate. Table 31B shows the labor force participation and unemployment rates used to adjust the mean income in Table 31A. Table 32A shows the labor force participation and unemployment rates used to adjust the mean income of all male workers 18-24 completing four years of high school only, also assuming a two percent growth rate, shown in Table 32B.

TABLE 31A

Unadjusted Expected Annual Earnings, Assuming a 2% Real Growth Rate, and Mean Annual Earnings Adjusted for Labor Force Participation and Unemployment of Male Year Round Full-Time Workers age 18-24 with 4 years of High School Completed for the Years 1971-1977*

	1971	1972	1973	1974	1975	1976	1977
Unadjusted	$6321.00	$6913.00	$7051.26	$7192.29	$7336.13	$7482.85	$7632.51
Adjusted	$4811.89	$5350.66	$5639.77	$5709.79	$5823.99	$5940.46	$6059.27

*Actual Data was used for 1971 & 1972.

TABLE 31B

Actual and Projected Labor Force Participation Rates & Unemployment Rates for Male Year Round Full-Time Workers Age 18-24 for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
LFPR	87.4%	90%	91.2%	88.9%	88.9%	88.9%	88.9%
Unemployment Rate*	12.9%	14%	12.3%	10.7%	10.7%	10.7%	10.7%

For 1974-1977 the estimated LFPR of 88.9% and Unemployment rate of 10.7% were the averages of LFPR's for 1971-73 and Unemployment rates respectively of the period 1966-1972.

*See table 6 LFPR's & Unemployment rates lag from actual rates for 1971-72 by one year. This adjustment was made to facilitate comparison with Agri-Business Program graduates and to account for the population of High School graduates not enrolled in school for the ½ year preceding the Agri-Business Program graduation.

TABLE 32A

Actual & Projected Labor Force Participation Rates and Unemployment Rates for all males age 18-24 with 4 years of High School completed only for the years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
LFPR	87.4%	90%	91.2%	88.9%	88.9%	88.9%	88.9%
Unemployment Rate	12.9%	14%	12.3%	10.7%	10.7%	10.7%	10.7%

For the 1974-1977 the estimated LFPR of 88.9% and Unemployment rate of 10.7% were averages of the LFPR's and Unemployment rates respectively of the period 1966-1972. See table 6. For 1971-1973 LFPR's & Unemployment rates lag from actual rates for 1971-1972 by one year. This adjustment was made to facilitate comparison with Agri-Business program graduates and to account for the population of high school graduates not enrolled in school for the ½ year preceding the Agri-Business Program graduation.

TABLE 32B

Unadjusted Expected Mean Annual Income Assuming a 2% Real Growth Rate, and Expected Mean Annual Income Adjusted for Labor Force Participation and Unemployment for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
Unadjusted	$4195.00	$4837.00	$4933.74	$5032.41	$5133.06	$5235.72	$5340.44
Adjusted	$3193.46	$3743.84	$3946.12	$3995.11	$4075.02	$4156.52	$4239.65

Actual Data used for 1971-1972

*Unadjusted for labor force participation and unemployment.

Tables 33A and 33B illustrate the computation of deflated adjusted expected earnings of Agri-Business Program students graduating in 1971-1973; assuming a 10 percent growth rate in earnings using deflators 1 and 2 respectively.

As discussed previously, in order to construct benefit-cost ratios, it is necessary that all costs and benefits be discounted for the time value of money. Tables 34A and 34B show the present value (using a five percent discount rate) of the deflated adjusted expected annual earnings of Agri-Business Program graduates that were previously computed in Tables 33A and 33B.

The adjusted expected mean income of high school graduates (whether that of year round full-time workers, Table 35A, or that of all males 18-24, Table 35B) must be brought to the same point in time, in order to properly determine benefit-cost ratios. Again, a five percent discount rate was used.

TABLE 33A

Deflated Unadjusted Expected Annual Earnings, Assuming a 10% Growth Rate, and Expected Annual Earnings Adjusted for Labor Force Participation, and Unemployment of Agri-Business Program Students Graduating In 1971-1973 for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
Year of Graduation:							
1971							
Unadjusted	$4086.72	$4495.39	$4944.93	$5439.47	$5983.42		
Adjusted	3347.12	4495.39	4035.36	4662.64	5128.91		
1972							
Unadjusted		$4747.20	$5221.92	$5416.70	$6318.52	$6950.37	
Adjusted		4747.20	4261.40	4923.70	5416.16	5957.77	
1973							
Unadjusted			$5423.16	$5965.48	$6562.03	$7218.23	$7940.05
Adjusted			4425.62	5113.53	5624.88	6187.37	6806.11

*Deflator 1 figures were used initially.

TABLE 33B

Deflated Unadjusted Expected Annual Earnings*, assuming a 10% Real Growth Rate, and Expected Annual Earnings Adjusted for Labor Force Participation, and Unemployment of Agri-Business Program students graduating in 1971-1973, for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
Year of Graduation:							
1971							
Unadjusted	$4419.72	$4861.69	$5347.86	$5882.65	$6470.91		
Adjusted	3619.75	4861.69	4364.17	5042.53	5546.78		
1972							
Unadjusted		$5103.72	$5614.09	$6175.50	$6793.05	$7472.35	
Adjusted		5103.72	4581.44	5293.56	5882.91	6405.21	
1973							
Unadjusted			$5847.24	$6431.96	$7075.16	$7782.68	$8560.94
Adjusted			4771.70	5513.39	6064.73	6671.20	7338.33

*Deflator 2 figures were used initially.

TABLE 34A

The Present Value of Deflated*[1] Adjusted*[2] Expected Annual Earnings, Assuming a Social Discount Rate of 5%, Of Agri-Business Program Students Graduating in 1971-1973 for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
Years of Graduation:							
1971							
Adjusted Expecved Annual Earnings	$3347.12	$4495.39	$4035.36	$4662.64	$5128.91		
Present Value of Adjusted Earnings	3186.46	4077.32	3486.55	3837.35	4021.07		
1972							
Adjusted Expected Annual Earnings		$4747.20	$4261.40	$4923.70	$5416.16	$5957.77	
Present Value of Adjusted Earnings		4519.33	3865.09	4254.08	4457.50	4670.89	
1973							
Adjusted Expected Annual Earnings			$5423.16	$5965.48	$6562.03	$7218.23	$7940.05
Present Value of Adjusted Earnings			5162.00	5410.69	5669.59	5940.60	6225.14

*[1]Deflator 1 figures were used initially.

*[2]Adjusted for Labor Force Participation & Unemployement.

TABLE 34B

The Present Value of Deflated*[1] Adjusted*[2] Expected Annual Earnings, Assuming a Social Discount Rate of 5%, Of Agri-Business Program Students Graduating in 1971-1973 for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
Years of Graduation:							
1971							
Adjusted Expected Annual Earnings	$3619.75	$4861.69	$4364.17	$5042.53	$5546.78		
Present Value of Adjusted Earnings	3446.00	4409.55	3770.64	4150.04	4348.68		
1972							
Adjusted Expected Annual Earnings		$5103.72	$4581.44	$5293.56	$5882.91	$6405.21	
Present Value of Adjusted Earnings		4858.74	4155.37	4573.64	4841.63	5021.68	
1973							
Adjusted Expected Annual Earnings			$5847.24	$6431.96	$7075.16	$7782.68	$8560.94
Present Value of Adjusted Earnings			5566.57	5833.79	6112.94	6405.15	6711.78

*[1]Deflator 2 figures were used initially.

*[2]Adjusted for Labor Force Participation & Unemployment.

TABLE 35A

The Present Value of Adjusted* Expected Mean Annual Earnings, Assuming a Social Discount Rate of 5%, of Male Year Round Full-Time Workers age 18-24 with 4 years of High School completed; corresponding with Agri-Business Program Students Graduating 1971-1973 for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
Years of Graduation:							
1971							
Adjusted Mean Annual Earnings	$4811.59	$5350.66	$5639.77	$5709.79	$5823.99		
Present Value of Adjusted Earnings	4580.92	4853.05	4872.76	4699.16	4566.01		
1972							
Adjusted Mean Annual Earnings		$5350.66	$5639.77	$5709.79	$5823.99	$5940.46	
Present Value of Adjusted Earnings		5093.83	5115.27	4933.26	4793.14	4657.32	
1973							
Adjusted Mean Annual Earnings			$5639.77	$5709.79	$5823.99	$5940.46	$6059.28
Present Value of Adjusted Earnings			5369.06	5173.78	5031.93	4892.40	4750.48

*Adjusted for Labor Force Participation & Unemployment.

TABLE 35B

The Present Value of Adjusted* Expected Mean Annual Income, Assuming a Social Discount Rate of 5%, for all males age 18-24 with 4 years of High School completed; corresponding with Agri-Business Program students graduating 1971-1973 for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
Years of Graduation:							
1971							
Adjusted Mean Annual Income	$3193.46	$3743.84	$3946.12	$3995.11	$4075.02		
Present Value of Adjusted Income	3040.17	3395.66	3409.45	3287.98	3194.82		
1972							
Adjusted Mean Annual Income		$3743.84	$3946.12	$3995.11	$4075.02	$4156.52	
Present Value of Adjusted Income		3564.14	3579.13	3452.64	3353.74	3258.71	
1973							
Adjusted Mean Annual Income			$3946.12	$3995.11	$4075.02	$4156.52	$4239.65
Present Value of Adjusted Income			3756.71	3623.56	3520.82	3420.82	3323.89

*Adjusted for Labor Force Participation & Unemployment.

CHAPTER FOUR

SOCIETAL AND PRIVATE BENEFIT COST RATIOS

The computation of societal benefit cost ratios entails first determining the income differential between an Agri-Business Program graduate and a high school graduate. This was accomplished by subtracting the present value of expected adjusted mean income of a high school graduate from the present value of deflated adjusted expected earnings for each graduating class. This income differential was then multiplied by the number of students graduating from the Agri-Business Program in order to determine the net present value of total social benefits of the program. This amount, total social benefits, was then divided by the present value of societal economic costs in order to yield societal benefit-cost ratios.

Tables 36A, B, C, D, and E present societal benefit-cost ratios under varying assumptions as to societal economic costs. Remember that the decision rule as to whether to invest or not; is the benefit-cost ratio must equal or exceed one for investment to occur. In the selection among several projects and budget constraints exist, projects are selected that have the highest benefit-cost ratio, until either the funds are exhausted or benefit-cost ratios are less than one.

Although only a five-year time horizon was used, it must be remembered that the discounting process will considerably reduce the effect on the benefit-cost ratios of a sustained superior growth rate for a time horizon greater than five years.

It is clear that the 1971 class even under the most favorable assumptions has a societal benefit-cost ratio that is less than one. While the 1973 class even under the least favorable assumptions always enjoys at the least a positive benefit-cost ratio and under the more favorable assumptions has several benefit-cost ratios greatly in excess of one. While differences in ability or motivation may partially be the cause of this discrepancy (in which case the benefits would be adjusted downwards for earnings differences caused by increased motivation

or ability) another cause might be improvements in the quality of the program. However, this is mere speculation.

As noted earlier, private economic benefits differ from societal economic benefits only in that the latter are gross of income taxes while the former is net of income taxes. Because of this difference an adjustment had to be made to reduce the present value of expected mean annual earnings (of both the Agri-Business Program graduate and the high school graduate) for estimated income taxes. Estimated federal income tax rates were obtained from a chart found in Dr. Ghazalah's 1972 cost benefit study.[2] (see following page)

Tables 37A, B, C, and D illustrate the adjustment of earnings for taxes. Also, they illustrate that the expected earnings were matched with the mean income of year round full-time workers or all male workers under either deflator 1 or deflator 2 earnings assumptions was necessary to compute net private benefits. The tax rates were assumed to remain constant throughout the time horizon. The estimated tax rates were applied against earnings adjusted for labor force participation and unemployment. Consequently, the tax rates used were those based on adjusted income rather than unadjusted. A summary of net present value of private economic benefits under the various assumptions as to deflators and mean income of a high school graduate appears in Table 38.

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[2]Ghazalah, Ismail, "The Role of Vocational Education in Improving Skills and Earning Capacity in the State of Ohio: A Cost-Benefit Study", Ohio University, November, 1972, p. 17.

TABLE 36A

The Net Present Value of Societal Economic Benefits, Assuming a 5-year Time Horizon, and a Social Discount Rate = 5%, for the District One Technical Institute's Agri-Business Program Graduates in the Years 1971-1973

	1971	1972	1973
Present Value of Expected Earnings of a Agri-Business graduate (Deflator II)	$20,124.91	$23,451.06	$30,630.23
Present Value of Expected Earnings of a male year round full-time worker	23,571.87	24,592.82	25,217.65
Net Present Value of Societal Economic Benefits per graduate	-3,446.96	-1,141.76	5,412.58
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of Societal Economic Benefits	-37,916.56	-9,134.08	88,601.28
Total Social Economic Costs Per Class	166,503.18	188,938.81	261,422.31
Benefit/Cost Ratio	-22.8%	-4.8%	33.9%
Present Value of Expected Earnings of a Agri-Business graduate (Deflator II)	$20,124.91	$23,451.06	$30,630.23
Present Value of Expected Earnings of a male (Age: 18-24) worker	16,328.83	17,208.36	17,645.43
Net Present Value of Societal Economic Benefits per graduate	+3,796.83	+6,242.70	+12,984.43
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of Societal Economic Benefits	41,765.13	49,941.70	207,750.88
Total Social Economic Costs Per Class	166,503.18	188,938.81	261,422.31
Benefit/Cost Ratio	+25.1%	26.4%	79.5%

TABLE 36B

The Net Present Value of Societal Economic Benefits, Assuming a 5-Year Time Horizon, and a Social Discount Rate = 5%, for the District One Technical Institute's Agri-Business Program Graduates in the Years 1971-1973

	1971	1972	1973
Present Value of Expected Earnings of a Agri-Business graduate (Deflator I)	$18,608.75	$21,766.89	$28,408.02
Present Value of Expected Earnings of Male Year Round Full-Time Worker	23,571.87	24,592.82	25,217.65
Net Present Value of Societal Economic Benefits per graduate	-4,963.12	-2,825.93	+3,190.37
# of Agri-Business Graduates	x 11	x 8	x 16
Total Net Present Value of Societal Economic Benefits	-54,594.32	-22,607.46	+51,045.92
Total Social Economic Costs Per Class	166,503.18	188,938.81	261,422.31
Benefit/Cost Ratio	-32.7%	-11.9%	+19.5%
Present Value of Expected Earnings of a Agri-Business Graduate (Deflator I)	$18,608.75	$21,766.89	$28,408.02
Present Value of Expected Earnings of a Male age: 18-24 Worker	16,328.08	17,208.36	17,645.80
Net Present Value of Societal Economic Benefits per graduate	+2,280.67	+4,558.53	10,762.27
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of Societal Economic Benefits	+25,087.37	+36,448.24	+172,196.32
Total Social Economic Costs Per Class	166,503.18	188,938.81	261,422.31
Benefit/Cost Ratio	15.1%	19.3%	65.9%

TABLE 36C

The Net Present Value of Societal Economic Benefits, Assuming a 5-Year Time Horizon, and a Social Discount Rate = 5%, for the District One Technical Institute's Agri-Business Program Graduates in the Years 1971-1973

	1971	1972	1973
Present Value of Expected Earnings of a Agri-Business graduate (Deflator I)	$18,608.75	$21,766.89	$28,408.02
Present Value of Expected Earnings of a male year round full-time worker	23,571.87	24,592.82	25,217.65
Net Present Value of SEB per graduate	-4,963.12	-2,825.93	+3,190.37
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of SEB	-54,594.32	-22,607.44	+51,045.92
Total Societal Economic Costs Per Class*	142,840.52	162,497.53	224,859.23
Benefit/Cost Ratio	-38.2%	-13.9%	+22.7%
Present Value of Expected Earnings of a Agri-Business graduate (Deflator II)	$20,124.91	$23,451.06	$30,630.23
Present Value of Expected Earnings of a male year round full-time worker	23,571.87	24,592.82	25,217.65
Net Present Value of SEB per graduate	-3,446.96	-1,141.76	+5,412.58
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of SEB	-37,916.56	-9,134.08	+88,601.28
Total Societal Economic Costs Per Class*	142,840.52	162,497.53	224,859.23
Benefit/Cost Ratio	-26.5%	-5.6%	+39.4%

*Student Opportunity Costs were computed by using the mean income of male year round full-time workers adjusted for Labor Force Participation and Unemployment and reduced by adjusted summer earnings of the same.

TABLE 36D

The Net Present Value of Societal Economic Benefits, Assuming a 5-Year Time Horizon, and a Social Discount Rate = 5% for the District One Technical Institute's Agri-Business Program Graduates in the Years 1971-1973

	1971	1972	1973
Present Value of Expected Earnings of a Agri-Business graduate (Deflator I)	$18,608.75	$21,766.89	$28,408.02
Present Value of Expected Earnings of a male worker (Age: 18-24)	16,328.08	17,208.36	17,645.80
Net Present Value of Societal Economic Benefits per graduate	+2,280.67	+4,558.53	+10,762.22
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of Societal Economic Benefits	25,087.37	36,448.24	172,196.32
Total Social Economic Costs Per Class	102,767.32	118,231.21	168,061.21
Benefit/Cost Ratio	24.4%	30.8%	102.3%
Present Value of Expected Earnings of a Agri-Business graduate (Deflator II)	$20,124.91	$23,451.06	$30,630.23
Present Value of Expected Earnings of a male worker (Age: 18-24)	16,328.08	17,208.36	17,645.80
Net Present Value of Societal Economic Benefits per graduate	+3,796.83	+6,242.70	+12,984.43
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of Societal Economic Benefits	41,765.13	44,941.60	207,750.88
Total Social Economic Costs Per Class	102,767.32	118,231.21	168,061.21
Benefit/Cost Ratio	40.6%	38.0%	123.6%

TABLE 36E

The Net Present Value of Societal Economic Benefits, Assuming a 5-Year Time Horizon, and a Social Discount Rate = 5%, for the District One Technical Institute's Agri-Business Program Graduates in the Years 1971-1973

	1971	1972	1973
Present Value of Expected Earnings of a Agri-Business graduate (Deflator I)	$18,608.75	$21,766.89	$28,408.02
Present Value of Expected Earnings of a male year round full-time worker	23,571.87	24,592.82	25,217.65
Net Present Value of SEB per graduate	-4,963.12	-2,825.93	+3,190.37
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of SEB	-54,594.32	-22,607.44	+51,045.92
Total Societal Economic Costs Per Class*	99,357.59	114,861.95	164,552.43
Benefit/Cost Ratio	-54.9%	-19.7%	+31%
Present Value of Expected Earnings of a Agri-Business graduate (Deflator II)	$20,124.91	$23,451.06	$30,630.23
Present Value of Expected Earnings of a male year round full-time worker	23,571.87	24,592.82	25,217.65
Net Present Value of SEB per graduate	-3,446.96	-1,141.76	+5,412.58
# of Agri-Business graduates	x 11	x 8	x 16
Total Net Present Value of SEB	-37,916.56	-9,134.08	+88,601.28
Total Societal Economic Costs Per Class*	99,357.59	114,861.95	164,552.43
Benefit/Cost Ratio	-38.2%	-8%	+53.8%

*Student Opportunity Costs were computed by using the mean income of male (18-24) workers adjusted for Labor Force Participation and Unemployment and reduced by summer earnings (10/52 of the mean income of male year round full-time workers).

EFFECTIVE RATES OF FEDERAL INDIVIDUAL INCOME TAX
(TAX REFORM ACT OF 1969)

Annual Income (dollars)	Actual Tax Rate (percent)
-- 1500	0
1500 -- 2000	0.3
2000 -- 2500	1.5
2500 -- 3000	2.5
3000 -- 3500	3.3
3500 -- 4000	4.2
4000 -- 4500	5.0
4500 -- 5000	5.5
5000 -- 6000	6.2
6000 -- 7000	7.1
7000 -- 8000	7.3
8000 -- 9000	8.1
9000 -- 10,000	8.5
10,000 -- 11,000	9.2
11,000 -- 12,000	9.6
12,000 -- 13,000	10.1
13,000 -- 15,000	10.9
15,000 -- 20,000	11.9
20,000 -- 25,000	13.6

Reprinted from:

Ghazalah, Ismail, The Role or Vocational Education in Improving Skills and Earning Capacity in the State of Ohio: A Cost Benefit Study", 1972.

TABLE 37A

The Net Present Value of Deflated* Adjusted** Expected Mean Annual Earnings, Net of Federal Income Taxes, of Agri-Business Program Graduates, Assuming a Time Horizon of 5 Years and a Private Discount Rate = 5%; for Classes Graduating in 1971-1973, for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
1971							
Agri-Business Program Graduate	3,881.31	3,873.45	3,312.22	3,626.30	3,771.76		
Male Worker	2,939.85	3,253.05	3,226.25	3,149.88	3,035.07		
Net Economic Benefits	+941.46	+620.40	+85.97	+476.42	+736.69		
1972							
Agri-Business Program Graduate		4,270.77	3,671.84	4,020.10	4,181.13	4,381.30	
Male Worker		3,414.44	3,428.81	3,306.80	3,186.05	3,095.78	
Net Economic Benefits		+856.33	+243.03	+713.30	+995.08	1,285.52	
1973							
Agri-Business Program Graduate			4,002.53	4,350.42	4,558.58	4,730.61	4,957.13
Male Worker			3,598.92	3,471.38	3,344.78	3,249.78	3,157.69
Net Economic Benefits			+403.61	+879.04	+1,213.80	+1,480.83	+1,799.44

*Deflator I figures were used.

**Adjusted for Labor Force Participation and Unemployment.

TABLE 37B

The Net Present Value of Deflated* Adjusted** Expected Mean Annual Earnings, Net of Federal Income Taxes, of Agri-Business Program Graduates, Assuming a Time Horizon or 5 Years and a Private Discount Rate - 5%; For Classes Graduating in 1971-1973, for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
1971							
Agri-Business Program Graduate	$3,881.31	$3,873.45	$3,312.22	$3,626.30	$3,771.76		
Male Year Round Full-Time Worker	4,328.97	4,552.16	4,570.65	4,407.81	4,882.92		
Net Economic Benefits	-447.66	-678.71	-1,258.43	-781.51	-511.16		
1972							
Agri-Business Program Graduate		$4,270.77	$3,671.84	$4,020.10	$4,181.13	$4,381.30	
Male Year Round Full-Time Worker		4,778.01	4,798.12	4,627.40	4,495.97	4,368.57	
Net Economic Benefits		-507.24	-1,126.28	-607.30	-314.84	+12.73	
1973							
Agri-Bsuiness Program Graduate			$4,002.53	$4,350.42	$4,558.58	$4,730.61	$4,957.13
Male Year Round Full-Time Worker			5,036.18	4,857.70	4,719.95	4,585.88	4,413.20
Net Economic Benefits			-1,033.65	-507.28	-161.37	+144.73	+543.96

*Deflator I figures were used.

**Adjusted for Labor Force Participation and Unemployment.

TABLE 37C

The Net Present Value of Deflated* Adjusted** Expected Mean Annual Earnings, Net of Federal Income Taxes, of Agri-Business Program Graduates, Assuming a Time Horizon Of 5 Years and a Private Discount Rate = 5%; for Classes Graduating in 1971-1973, for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
1971							
Agri-Business Program Graduate	3301.27	4167.03	3582.11	3892.70	4079.58		
Male Worker	2939.85	3253.05	3226.25	3149.88	3035.07		
Net Economic Benefits	+361.42	+913.98	+355.86	+742.82	+1044.51		
1972							
Agri-Business Program Graduate		4557.50	3947.60	4290.07	4541.45	4665.15	
Male Worker		3414.44	3428.81	3306.80	3186.05	3095.78	
Net Economic Benefits		+1143.06	+518.79	+983.27	+1355.40	+1569.37	
1973							
Agri-Business Program Graduate			4292.81	4690.60	4867.89	5100.58	5333.26
Male Worker			3598.92	3471.38	3344.78	3249.78	3157.69
Net Economic Benefits			+693.89	+1219.22	+1523.11	+1850.80	+2175.57

*Deflator 2 figures were used.

**Adjusted for Labor Force participation and unemployment.

TABLE 37D

The Net Present Value of Deflated* Adjusted** Expected Mean Annual Earnings, Net of Federal Income Taxes, of Agri-Business Program Graduates, Assuming a Time Horizon of 5 Years and a Private Discount Rate = 5%; for Classes Graduating in 1971-1973, for the Years 1971-1977

	1971	1972	1973	1974	1975	1976	1977
1971							
Agri-Business Program Graduate	3,301.27	4,167.03	3,582.11	3,892.70	4,079.58		
Male Worker (Year round full-time worker)	4,328.97	4,552.16	4,570.65	4,407.81	4,282.92		
Net Economic Benefits	-1,027.70	-385.13	-987.95	-515.11	-203.34		
1972							
Agri-Business Program Graduate		4,557.50	3,947.60	4,290.07	4,541.45	4,665.15	
Male Worker (Year round full-time worker)		4,778.01	4,798.12	4,627.40	4,495.97	4,368.57	
Net Economic Benefits		-220.51	-850.52	-337.33	+45.48	+296.58	
1973							
Agri-Business Program Graduate			4,292.81	4,690.60	4,867.89	5,100.58	5,333.26
Male Worker (Year round full-time worker)			5,036.18	4,857.70	4,719.70	4,585.88	4,413.20
Net Economic Benefits			-743.37	-167.10	+148.19	+514.70	+920.06

*Deflator 2 figures were used.

**Adjusted for Labor Force Participation and Unemployment.

The private economic benefits as computed above (See Table 38) when divided by the private economic costs as previously computed; yields private economic benefit-cost ratios. Tables 39A and 39B show the benefit-cost ratios under differing assumptions as to deflated earnings. As with the societal benefit-cost ratios there is a marked upward trend in private economic benefit-cost ratios from the 1971 class to the 1973 class. Again, the 1971 class has a benefit-cost ratio less than one in every case, while the 1973 class has a benefit-cost ratio very much greater than one in several cases. Upon even casual observation of these ratios it is clear that the choices of assumptions have a marked affect on the final outcome.

For the technical institute administrator who faces budget constraints in resource allocation to programs, and for the student who must decide which among several alternative programs to enter, it is self-evident that cost benefit analysis is extremely useful in decision making.

TABLE 38

The Net Present Value of Private Economic Benefits* of an Agri-Business Program Graduate, Graduating in 1971-1973, Assuming a 5-Year Time Horizon and a Private Discount Rate = 5%

	1971	1972	1973
Deflator 2:			
Male Worker	+ 3,418.59	+ 5,569.79	+ 7,462.59
Year Round Full-Time Worker	- 3,119.23	- 1,066.30	+ 672.48
Deflatcr 1:			
Male Worker	+ 2,860.94	+ 4,093.26	+ 5,776.72
Male Year Round Full-Time Worker	- 3,677.47	- 2,542.93	+ 1,013.61

*Benefits are reduced by federal income taxes.

TABLE 39A

Private Economic Benefit-Cost Ratios of Agri-Business Program Graduates, Graduating in 1971-1973, Assuming a 5-Year Time Horizon and a Private Discount Rate = 5%

	1971	1972	1973
Deflator I:			
Private Economic Benefits (A)	+2,860.94	+4,093.26	+5,776.72
Private Economic Costs (C)	4,987.42	5,213.00	5,459.38
Benefit/Cost Ratio	57.3%	78.5%	105.8%
Private Economic Benefits (A)	+2,860.94	+4,093.26	+5,776.72
Private Economic Costs (D)	4,696.26	4,885.88	5,242.56
Benefit/Cost Ratio	60.9%	83.7%	110.1%
Private Economic Benefits (B)	- 3,677.47	- 2,542.93	- 1,013.61
Private Economic Costs (E)	10,376.74	10,412.56	10,762.84
Benefit/Cost Ratio	-35.4%	-24.1%	+9.4%
Private Economic Benefits (B)	-3,677.47	-2,542.93	+1,013.61
Private Economic Costs (F)	8,374.92	8,466.28	8,664.00
Benefit/Cost Ratio	43.9%	30.0%	11.7%

(A) PEB when matched with all male workers 18-24.

(B) PEB when matched with male year round full-time workers.

(C) PEC computed with s.o.c. = adjusted mean income of all male workers 18-24 reduced by summer earnings of same.

(D) PEC computed with s.o.c = adjusted mean income of all males reduced by summer earnings of a year round full-time worker.

(E) PEC computed with s.o.c. = mean income of year round full-time workers reduced by summer earnings of all males.

(F) PEC computed with s.o.c. = mean income of year round full-time workers reduced by summer earnings of same.

TABLE 39B

Private Economic Benefit-Cost Ratios of Agri-Business Program Graduates, Graduating in 1971-1973, Assuming a 5-Year Time Horizon and a Private Discount Rate = 5%

	1971	1972	1973
Deflator:			
Private Economic Benefits (A)	+3,418.59	+5,569.79	+7,462.59
Private Economic Costs (C)	4,987.42	5,213.00	5,459.38
Benefit/Cost Ratio	68.5%	106.5%	136.7%
Private Economic Benefits (A)	+3,418.59	+5,569.79	+7,462.59
Private Economic Costs (D)	4,696.26	4,885.88	5,242.56
Benefit/Cost Ratio	72.7%	114.0%	142.3%
Private Economic Benefits (B)	- 3,119.23	- 1,066.30	+ 672.48
Private Economic Costs (E)	10,376.74	10,412.56	10,762.84
Benefit/Cost Ratio	-30.1%	-10.2%	+6.3%
Private Economic Benefits (B)	-3,119.23	-1,066.30	+ 672.48
Private Economic Costs (F)	8,374.92	8,466.28	8,644.06
Benefit/Cost Ratio	-37.2%	-12.6%	+7.8%

(A) Private Economic Benefits when matched with all male workers 18-24.

(B) Private Economic Benefits when matched with male year round full-time workers.

(C) Private Economic Costs computed with s.o.c. = adjusted mean income of all males reduced by summer earnings of same.

(D) Private Economic Costs computed with s.o.c. = adjusted mean income of all males reduced by year round full-time worker summer earnings.

(E) Private Economic Costs computed with s.o.c. = mean income of year round full-time workers reduced by summer earnings of all male workers.

(F) Private Economic Costs computed with s.o.c. = mean income of year round full-time workers reduced by summer earnings of same.

A P P E N D I X 1

MATERIAL RELATED TO PRIVATE ECONOMIC COSTS

July 5, 1974

AREA VOCATIONAL, TECHNICAL AND ADULT EDUCATION DISTRICT ONE
APPROXIMATE COST FOR ATTENDING DISTRICT ONE TECHNICAL INSTITUTE - EAU CLAIRE

ALL STUDENTS:
Registration Fee and Activity Fee - $25 per semester

ROOM: Price range is from $10 to $14 per week depending upon accommodations and the number of students involved.

MEALS: Students should budget $3 to $4 per day.

RESIDENT HALL LIVING UW-EC: Room $263.50 per semester; board $243 per sem. (subject to change)

GRADUATION FEE - $10

ESTIMATE FOR BOOKS AND CLASSROOM SUPPLIES FOR ONE YEAR:
(Approximately two-thirds of this amount is due on registration day as many of the books are used for two semesters.) There is an opportunity to buy used books for some classes. This could reduce book costs.

Account Clerk - $70
Accounting - $80
Agricultural Mechanics - $65
Air Conditioning & Refrigeration Technology - $90
Appliance Servicing - $60
Audio Visual Assistant - $70
Auto Body - $60
Automotive Mechanics - $65
Barbering - Books $66 - Supplies $70 (Estimate)
Chemicals & Fertilizers - $65
Child Care Assistant - $60
Civil Structural Technology - $120
Clerk Typist - $60
Clerk Typist-Medical - $70
Data Preparation - $60
Data Processing - $70
Diesel Mechanics - $65
Drafting-Mechanical (Industrial) - $100
Electrical Power Distribution (Lineman) - $50
Electronics Servicing - $65
Electronics Technology (Industrial) - $90
Fashion Merchandising - $70
Feeds, Seeds, & Farm Supply - $65
Fluid Power Maintenance - $60
Fluid Power Technology - $65
Machine Tool - $50
Machinery, Partsman-Salesman - $65
Marketing - $70
Mechanical Design Drafting Technology - $110
Medical Lab Technology - $100 (Does not include uniform, insurance, licensure exam, etc)
Medical Records Technology - $150 (Does not include uniform, insurance, licensure exam,etc)
Metal Fabrication - $60
Police Science - $75
Practical Nursing - $75 (Does not include uniform, insurance, licensure exam, etc.)
Precision Inspection & Materials Testing - $60
Pre-Service Nursing Assistant - Total Education Cost $30.50
In-Service Nursing Assistant - Total Educational Cost $24.50
Quantity Foods Preparation - $50
Radiologic Technology - $100 (Does not include uniform, insurance, licensure exam, etc)
Refrigeration Servicing - $70
Restaurant & Hotel Cookery - $65
Secretarial Science - $70
[illegible]nography - $60
[illegible]ling - $50

LASS FEE SCHEDULE:

Estimated class and laboratory fees (Approximately 1/2 of the total for one semester). Class fees are due on registration day. Total lab fees for any one semester may vary in reference to elective classes selected.

	1st Year Est.	2nd Year Est.
Account Clerk	$ 19.50	$ ---
Accounting	18.00	15 00
Air Conditioning & Refrigeration Technology	25.00	40.00
Agricultural Mechanics	162 50 (Est)	(Not Available)
Appliance Servicing	111.00	---
Summer Session	21 00	---
Audio Visual Assistant	84.50	---
Auto Body	141.50	---
Automotive Mechanics	144 00	132.00
Barbering	97.50	---
Chemicals & Fertilizers	26.50	20 00
Civil Structural Technology	25.50	24.50
Child Care Assistant	27.00	---
Clerk Typist	31.50	---
Clerk Typist-Medical	23.00	---
Data Preparation	33.50	---
Data Processing	23 00	24 00
Diesel Mechanics	144.00	148.50
Drafting-Mechanical (Industrial)	25.00	---
Electrical Power Distribution (Lineman)	89 00	---
Electronics Servicing	33.50	51 00
Electronics Technology (Industrial)	31 50	45.00
Fashion Merchandising	15.50	30 00
Feeds, Seeds & Farm Supply	26 50	20 00
Fluid Power Maintenance	61.00	---
Fluid Power Technology	34.00	41 50
Machine Tool	99 50	---
Machinery, Partsman-Salesman	22 00	19.00
Marketing	16.00	16.50
Mechanical Design Drafting Technolgy	44 00	23.50
Medical Lab Technology	118.50	80 00
Medical Records Technology	61 50	44.50
Metal Fabrication	174.00	---
Police Science	13.00	28 00
Practical Nursing	89 00	---
Summer Session	14.50	
Precision Inspection & Materials Testing	78.50	---
Pre-Service Nursing Assistant (Total Educational Cost)	30.50	---
In-Service Nursing Assistant (Total Educational Cost)	24.00	---
Production Agriculture (Registration Fee-$12 per semester; $1 50 lab fee for each general course, $13 for Welding)		
Quantity Foods Preparation	76 50	87.50
(Does not include uniforms--prices range from $8 to $16 each)		
Radiologic Technology	82.00	105.00
Summer Session	44 50	
Refrigeration Servicing	110 00	---
Summer Session	21.00	
Restaurant & Hotel Cookery	76.00	95 00
(Does not include uniforms--prices range from $8 to $16 each)		
Secretarial Science	22.50	23.50
Stenographer	31 50	---
Welding	136 00	---
Wood Technics	111.50	---
Reading Improvement & Developmental Reading	3.00	---
Math I	3.50	---

TOOL BOXES

Agri-Mechanics	$164.00
Auto Body	128.50
Auto Mechanics I	170.50
Auto Mechanics II	30.00
Diesel Mechanics	164.00
Refrigeration Servicing	65.50
Appliance Servicing	65.50

Coveralls or shop coats are required in all Trade & Industrial training programs of a mechanical nature. The cost of this clothing on a rental basis is included in the class fee schedule.

Safety glasses are also required for many of the Trade & Industrial areas of training. ($5.50 non-prescription glasses) These are to be purchased by the student on registration day. Prescription glasses vary in price depending upon the correction required. The cost for the eye examination and the dispensing of the prescription glasses is a personal obligation of the student.

TUITION:

There is no tuition for any resident of Area Vocational, Technical and Adult Education District One.

Wisconsin residents of other Vocational Technical and Adult School Districts may have their tuition paid by their local Vocational Board providing:

1. that such District does not offer a similar training program.
2. that the student notifies such District on the required form. (Non-resident tuition forms are mailed to the student upon receipt of application)
3. that the District agrees to pay such non-resident tuition.

Non-resident tuition rates are computed from a formula provided by the Wisconsin Board of Vocational, Technical and Adult Education. The rates vary from year to year as they are based on current instruction costs. (The non-district resident tuition rate for the academic school year 1974-75 is $800)

TUITION PAYMENTS ARE DUE AT TIME OF REGISTRATION AND MUST BE PAID AT LEAST ONE-HALF A SEMESTER (NINE WEEKS) IN ADVANCE.

Enrollment Tests	$ 3.00 ($1.00 for only one test)
A.C.T.	7.00
Graduation Fee	10.00
GED Tests	15.00

A P P E N D I X 2

MATERIAL RELATED TO SOCIETAL ECONOMIC COSTS

Agri-Business (Marketing)

The Agri-Business course is designed to provide technical instruction for students who are interested in employment related to agriculture. The Agri-Business program in Eau Claire is designed to provide training for distribution positions specializing in agricultural products and equipment. The machinery-salesman program deals chiefly with farm implements and equipment from a businessman's viewpoint. The curriculum incorporates a combination of agricultural technology, general education and marketing education. Students completing the program are eligible for employment in the area of agricultural sales, advertising, and business management.

FIRST SEMESTER

No.	Course Name	Credits
801-151	Communication Skills I	3
005-143	Principles of Agri-Marketing I	3
005-151	Farm Equipment I	3
809-151	Psychology of Human Relations	3
105-101	Business Mathematics	3
106-180	Records Management	2
		18

SECOND SEMESTER

801-152	Communication Skills II	3
005-147	Inventory Control	3
005-152	Farm Equipment II	3
005-137	Agri-Business Selling	3
101-111	Accounting I	4
		17

THIRD SEMESTER

102-170	Credit Procedures	3
	Principles of Advertising	4
104-118	Layout and Lettering Techniques	2
104-119	Visual Merchandising	2
809-153	American Institutions	3
	Elective	3
		17

FOURTH SEMESTER

005-141	Oragnization and Function of Agri-Business	4
102-106	Economics	3
106-131	Typing I or II	3
102-160	Business Law	3
	Elective	3
		16

A minimum of 64 credits is required for the Associate Degree. Grades must average 2.0 for all courses taken (C average).

Agri-Business

ASSOCIATE DEGREE

The Agri-Business course is designed to provide technical instruction for students who are interested in employment related to agriculture. The Agri-Business program in Eau Claire is designed to provide training for distribution positions specializing in agricultural products and equipment. The machinery-salesman program deals chiefly with farm implements and equipment from a businessman's viewpoint. The curriculum incorporates a combination of agricultural technology, general education and marketing education. Students completing the program are eligible for employment in the areas of agricultural sales, advertising, and business management.

Course No.	Course Name	Credits
FIRST SEMESTER		
801-151	Communication Skills I	3
005-143	Principles of Agri-Marketing	3
005-151	Farm Equipment I	3
809-151	Psychology of Human Relations	3
105-101	Business Mathematics	3
		15
SECOND SEMESTER		
801-152	Communication Skills II	3
005-147	Inventory Control	3
005-152	Farm Equipment II	3
105-137	Agri-Business Selling	3
101-111	Accounting I	4
		16
THIRD SEMESTER		
104-162	Credit Procedures	3
104-125	Principles of Advertising	4
104-119	Visual Merchandising	2
104-118	Layout and Lettering Techniques	2
809-153	American Institutions	3
	Elective	3
		17
FOURTH SEMESTER		
005-141	Organization and Function of Agri-Business	4
809-110	Economics	3
106-131	Typing I or II	3
102-160	Business Law	3
	Elective	3
		16
	TOTAL PROGRAM CREDITS	64

ELECTIVES:
104-113 Retailing, 104-192 Insurance, 104-160 Sales Management, 104-126 Advertising Techniques, 102-134 Introduction to Business, 102-136 Personnel Management, 101-112 Accounting II, 107-102 Introduction to Data Processing, 810-116 Speech, 106-180 Records Management, 103-120 Machine Calculation. Other electives in other departments such as Fluid Power (Hydraulics), Diesel Engines, Welding, etc, may be taken upon approval of the division coordinator.

Required Course Schedule for Agri-Business by Semester Rank for the years 1969-1973.

Fall 1969

Course No.	Description	Teacher(s)	Room No.	No. of Sections
801-151	Commun. Skills I	Schmelling[1], Skamser[1], Walhstrom[2], Klawiter[1], Qualye[3], Lansing[3]	(226[4], 235[1], 220[2], 233[4])	11
005-143	Princip. of Agri-Mktg I	Rounsville	(116[1])	1
005-151	Farm Equip. I	Kliner[2]	(118[2])	2
809-151	Psych. of Human Rel.	Van Gordon[2], Beyreis[1]	(237[2], 235)	3
105-101	Business Math	J. Severson[3], Beyreis[3], Helgeson[3], M. Johnson[1], Olson[1]	(235[3], 213[6], 114[1], 215[1])	11
106-180	Records Mgmt.	Sequin[4], Gravunder[3]	(211[6], 235[1])	7

Spring 1970

801-152	Commun. Skills II	Walhstrom[5], Moldenhauer[1], Quayle[4]	(222[1], 226[4], 220[5])	10
005-147	Inventory Control	Rounsville[1]	(New Bldg.)	1
005-152	Farm Equipment II	Kliner[1]	(New Bldg.)	1
005-137	Agri-Business Selling	Rounsville	(116)	1
101-111	Accounting I	Tremain[3], Wendt[1]	(203[1], 227[2], 229[1])	4

'all 1970

Course No.	Description	Teacher(s)	Room No.	No. of Sections
801-151	Comm. Skills I	Duerst[3], Lansing[3], Walde, Barry[3], Quayle[2], Klawiter[1]	(235[1], 220[1], 124[1], 211[1] 226[5], 213[2], 237[1], 230[1])	13
005-143	Princ. of Agri-Mktg I	Rounsville	(111)	1
005-151	Farm Equip. I	Kliner[2]	(New Shop)	2
809-151	Psychology of H R	Wahlstrom[1], D. Severson[2],	(237[1], 228[2])	3
105-101	Business Math	Beyreis[1], Braune[5], J. Severson[2], M. Johnson[3], Helgeson[1]	(235[1], 129[1], 111[1], 114[1], 118[1], 233[3], 215[1], 230[1], 237[1])	12
106-180	Records Mgmt.	Skamser[2], Gravunder[3], Hanson[2]	(211[2], 211[5])	7
**********				
104-162	Credit Proc.	Rounsville[3]	(118[2], 124[1])	3
104-118	Layout & Lettering Techn.	Jankowski	(118[2])	2
104-119	Visual Mdseing	Becher[2]	(114[2])	2
809-153	Am Instit.	Van Gordon[1], D. Severson[1], Stacy[1]	(220[1], 228[1], 124[1])	3
104-113	Elective Retailing	E. Johnson	(114[1])	1
104-125	Principle of Adv.	Becher[1]	(114[1])	1

Spring 1971

801-152	Comm. Skills II	Walde[6], Barry[2], Duerst[2], Klawiter[3], Lewis[3]	(220[1], 230[4], 235[7], 211[1], 222[2], 116[1], 145½)	16
005-147	Inventory Control	Rounsville[1]	(Ag. Lab)	1
005-152	Farm Equip. II	Kliner[1]	(M-135)	1
005-137	Agri-Business Selling	Rounsville[2]	(116, 111)	2
101-111	Acctg. I	Devine[2]	(229[2])	2

Course No.	Description	Teacher(s)	Room No.	No. of Sections
005-141	Org. & Funct. of Agri-Business	Rounsville	(118)	1
809-110	Economics	Van Gordon[5]	(237[5])	5
106-131	Typing I	Dow[2], Hanson[1], Briggs[1]	(212[4])	4
102-160	Business Law	Tremain[3]	(227[1], 229[1], 213[1])	3
104-125	Elective Principle Insurance	E. Johnson	(111)	1
Fall 1971				
801-151	Comm. Skills I	Klawiter[3], Gregone[3], Wahlstrom[5], Barry[4], Duerst[2]	(220[5], 144[4], 111[3], 160[3], 114[1], 237[2], 226[2], 124[2])	21
005-143	Princ. of Agri-Mktg	Rounsville	(222)	1
005-151	Farm Equip. I	Kliner	(134, Ag. Lab)	1
809-151	Psychology of Human Rel.	Van Gordon[3], Wahlstrom[2]	(237[3], 220[2])	5
105-101	Business Math	Jetha[3], Helgeson[5], J. Severson[1], Belay[1], Braune[4]	(143[1], 134[4], 149[1], 233[8])	14
**********				**********
104-102	Credit Proc.	Rounsville[2]	(222[2])	2
104-125	Princ. of Adv.	Becher[2]	(111[1], 114[1])	2
104-119	Visual Merchandising	Becher[2]	(111[2])	2
104-118	Layout & Lettering Techn.	Jankowski[3]	(114[3])	3
809-153	American Institutions	D. Severson[6], Stacy[1]	(228[6], 149[1])	7
104-113	Elective Retailing	Brown[2]	(215, 222)	2

Spring 1972

Course No.	Description	Teacher(s)	Room No.	No. of Sections
801-152	Comm. Skills II	Duerst[4], Klawiter[3], Wahlstrom[5]	(226[4], 211[1], 237[1], 144[1], 220[5])	12
005-147	Inventory Control	Rounsville	(W103[2])	1
005-152	Farm Equipment II	Kliner[1]	(222)	1
105-137	Agri-Business Selling (Salesmanship 104-104)	M. Johnson[2]	(215, 111)	2
101-111	Acctg. I	Devine[3], Wendt[1]	(229[4])	4
**********	**********	**********	**********	**********
005-141	Org. & Function of Agri-Business	Rounsville	(222)	1
109-110	Economics	Van Gordon[6]	(237[6])	6
106-131	Typing I or II	Hanson[1], Olson[2]	(212[3])	3
102-160	Business Law	Rice, Tremain	(203[2], 213[2])	4
104-142	Elective	E. Johnson (Prin. Insurance)	(111)	1

Fall 1972

104-162	Credit Proc.	Rounsville[2]	(201, 215)	2
104-125	Principles of Adv.	Becher	(114[3])	3
104-119	Visual Merchd.	Becher	(111)	1
104-118	Layout & Lettering Tech.	Jankowski	(116-118)	1
809-153	Am. Instit.	Hegland[2], Wahlstrom[3], D. Severson[4], Mattoon[3]	(135[1], 201[3], 230[2], 235[2], 228[4], 134[1], W103[1], 144)	13
104-113	Elective Retailing	Brown	(215[2])	2

Spring 1973

Course No.	Description	Teacher(s)	Room No.	No. of Section
005-141	Organization & Function of Agri-Business	Rounsville[1]	(215[1])	1
809-110	Economics 8 sections	Hegland[6], Van Gordon[2]	(201, 220, 230, 213, 237[2], 233[2], 226)	8
106-131	Typing	Gravunder[2], Carroll[5], Sequin[1]	(212[8])	8
102-160	Business Law	Tremain	(213[2], 227[1])	3
104-192	Elective Princip. Insurance	E. Johnson	(114[2])	2

Instructional Costs

Fall 1969

Course No.	Teachers	Enrollment	Course Salary	x Fringe Benefits	x No. of Sec.	= Total
801-151	EE	21	$622.58	$1.12	1	$ 697.29
	II	20	563.79	1.12	1	631.44
	MM	44	726.34	1.12	2	1627.00
	U	26	414.45	1.12	1	464.18
	BB	62	669.96	1.12	3	2251.07
	W	20	612.81	1.12	1	686.35
		193				$6357.33
						193
					= WA	32.94
005-143	DD	16	$1396.78	$1.12	1	$1564.39
		16				$1564.39
						16
					= WA	97.77
005-151	V	14	$777.63	$1.12	1	$870.95
		14				$870.95
						14
					= WA	62.21
809-151	LL	42	$884.10	$1.12	2	$1980.38
	D	23	872.87	1.12	1	977.61
		65				$2957.99
						65
					= WA	45.51

Course No.	Teachers	Enrollment	Course Salary	x Fringe Benefits	x No. of Sec.	= Total
105-101	D	72	$1454.78	$1.12	3	$ 4888.06
	P	73	715.39	1.12	3	2403.71
	T	12	918.24	1.12	1	1028.43
	AA	25	1255.25	1.12	1	1405.88
	HH	72	732.48	1.12	3	2461.13
		254				$12,187.66
						254
					= WA	47.98
106-180	M	64	$298.10	$1.12	4	$1335.49
	FF	81	458.82	1.12	4	2055.51
		145				$3391.00
						145
					= WA	23.39

Instructional Costs

Spring 1970

Course No.	Teacher	Enrollment	Course Salary	x Fringe Benefits	x No. of Sec.	= Total
801-152	MM	114	$ 726.34	$1.12	5	$4067.50
	Z	21	1047.59	1.12	1	1173.30
	BB	92	669.96	1.12	4	3001.42
		227				$8242.22
						227
						= WA 36.31
005-147	DD	18	$1047.59	$1.12	1	$1173.30
		18				$1173.30
						18
						= WA 65.18
005-152	V	15	$777.63	$1.12	1	$870.95
		15				$870.95
						15
						= WA 58.06
005-137	DD	27	$1396.78	$1.12	1	$1564.00
		27				$1564.00
						27
						= WA 57.94
101-111	KK	67	$1266.72	$1.12		$4256.35
	OO	5				801.24
		72				$5057.59
						72
						= WA 70.24

Instructional Costs

Fall 1970

Course No.	Teacher	Enrollment	Adjusted Course Salary	x Fringe Benefits	x No. of Sec.	= Total
801-151	K	72	$625.89	$1.15	3	$2159.32
	W	70	737.00	1.15	3	3542.65
	A	63	642.04	1.15	3	2215.04
	BB	42	734.00	1.15	2	1688.20
	U	22	471.94	1.15	1	542.73
		269				$9147.94
						269
					= WA	34.01
005-143	DD	20	$1213.88	$1.15	1	$1395.96
		20				$1395.96
						20
					= WA	69.00
005-151	V	20	$810.98	$1.15	1	$932.63
		20				$932.63
						20
					= WA	46.63
809-151	MM	29	$ 778.00	$1.15	1	$ 894.70
	GG	58	1833.76	1.15	2	958.83
		87				$1853.52
						87
					= WA	21.30

Course No.	Teachers	Enrollment	Course Salary	x	Adjusted Fringe Benefits	x	No. of Sec.	=	Total
105-101	E	124	$1074.84		$1.15		5		$6180.
	D	25	1142.60		1.15		1		1313.99
	HH	48	2250.47		1.15		2		5176.08
	T	59	1095.55		1.15		3		3779.65
	D	24	799.73		1.15		1		919.69
		280							$17,369.71
									280
								= WA	62.03
106-180	II	37	$354.83		$1.15		2		$ 816.11
	M	71	389.00		1.15		3		1342.05
	N	50	297.98		1.15		2		685.35
		158							$2843.51
									158
								= WA	18.00

Instructional Costs

Fall 1970

Course No.	Teachers	Enrollment	Course Salary	x Adjusted Fringe Benefits	x No. of Sec.	= Total
104-102	DD	60	$728.33	$1.15	3	$2512.74
		60				$2512.74 / 60 = WA 41.87
104-118	Q	35	$366.00	$1.15	2	$841.80
		35				$841.80 / 35 = WA 24.05
104-119	B	38	$709.65	$1.15	2	$1632.20
		38				$1632.20 / 38 = WA 42.95
809-153	LL	25	$ 857.60	$1.15	1	$ 986.24
	JJ	13	2645.66	1.15	1	3042.51
	GG	15	889.35	1.15	1	1022.75
		53				$5051.51 / 53 = WA 95.31
104-113	S	26	$473.65	$1.15	1	$544.70
		26				$544.70 / 26 = WA 20.95
104-125	B	26	$993.51	$1.15	1	$1142.54
		26				$1142.54 / 26 = WA 43.94

Instructional Costs

Spring 1971

Course No.	Teachers	Enrollment	Course Salary	x Adjusted Fringe Benefits	x No. of Sec.	= Total
801-152	NN	105	$1031.65	$1.15	6	$7118.04
	A	35	695.54	1.15	2	1599.74
	K	44	625.89	1.15	2	1438.74
	U	51	530.94	1.15	3	1831.74
	X	54	780.00	1.15	3	2691.00
		289				$14,679.26
						289
					= WA	50.78
005-147	DD	14	$971.10	$1.15	1	$1116.65
		14				$1116.65
						14
					= WA	79.76
005-152	V	19	$810.98	$1.15	1	$932.63
		19				$932.63
						19
					= WA	49.09
005-137	DD	14	$971.10	$1.15	1	$1116.65
		14				$1116.65
						14
					= WA	79.76
101-111	I	45	$1053.62	$1.15	2	$2433.26
		45				$2433.26
						45
					= WA	53.85
005-141	DD	14	$1213.89	$1.15	1	$1395.97
		14				$1395.97
						14
					= WA	99.71

Course No.	Teachers	Enrollment	Course Salary	x	Adjusted Fringe Benefits	x	No. of Sec.	=	Total
809-110	LL	100	$751.53		$1.15		5		$4321.30
		100							$4321.30
									100
								= WA	43.21
106-131	J	60	$1100.00		$1.15		2		$2530.00
	N	15	794.63		1.15		1		913.82
	F	13	1004.50		1.15		1		1155.18
		88							$4599.00
									88
								= WA	52.26
102-160	KK	80	$1077.93		$1.15		3		$3718.86
		80							$3718.86
									80
								= WA	46.49
104-125	S	32	$473.65		$1.15		1		$544.69
		32							$544.69
									32
								= WA	24.21

Instructional Costs 1971-1972

Fall 1971

Course No.	Teachers	Enrollment	Course Salary	x Adjusted Fringe Benefits	x No. of Sec.	= Total
801-151	U	55	$ 620.80	$1.18	3	$2197.63
	L	60	379.19	1.18	3	1342.33
	A	97	379.19	1.18	4	1789.78
	K	34	740.42	1.18	2	1747.39
	MM	104	858.97	1.18	5	5067.92
	BB	21	1283.70	1.18	1	1514.77
	W	65	783.16	1.18	3	2772.46
		436				$16,432.29
						436
					= WA	37.69
005-143	DD	23	$1123.87	$1.18	1	$1326.17
		23				$1326.17
						23
					= WA	57.66
005-151	V	23	$862.55	$1.18	1	$1017.81
		23				$1017.81
						23
					= WA	44.25
809-151	LL	77	$985.63	$1.18	3	$3489.13
	MM	45	858.97	1.18	2	2027.17
		122				$5516.30
						122
					= WA	45.22

Instructional Costs

Fall 1971

Course No.	Teachers	Enrollment	Course Salary	x	Adjusted Fringe Benefits	x	No. of Sec.	= Total
105-101	R	74	$1050.66		$1.18		3	$3719.34
	B	123	997.82		1.18		5	5887.14
	HH	18	4448.89		1.18		1	5249.69
	C	24	1466.38		1.18		1	1730.33
	E	91	1178.17		1.18		4	5561.01
		330						$22,147.51
								330
							= WACE	67.11
104-162	DD	53	$842.91		$1.18		2	$1989.27
		53						$1989.27
								51
							= WACE	37.53
104-125	B	51	$1010.80		$1.18		2	$2385.49
		51						$2385.49
								51
							= WACE	46.77
104-119	B	32	$808.64		$1.18		2	$1908.39
		32						$1908.39
								32
							= WACE	59.64
104-118	Q	51	$668.37		$1.18		3	$2366.03
		51						$2366.03
								51
							= WACE	46.39

Course No.	Teachers	Enrollment	Adjusted Course Salary	x	Fringe Benefits	x	No. of Sec.	=	Total
309-153	Q	18	$6932.89		$1.18		1		$8180.81
	GG	128	844.83		1.18		6		5981.40
		146							$14,162.21
									146
								= WACE	97.00
104-113	G	40	$488.44		$1.18		2		$1152.72
		40							$1152.72
									40
								= WACE	28.82

Instructional Costs 1971-1972

Spring 1972

Course No.	Teachers	Enrollment	Course Salary	x Adjusted Fringe Benefits	x No. of Sec.	= Total
801-152	K	87	$740.42	$1.18	5	$4368.49
	U	55	620.80	1.18	3	2197.63
	MM	95	858.97	1.18	3	3040.75
		237				$9606.87
						237
						= WA 40.54
005-147	DD	27	$1123.87	$1.18	1	$1325.81
		27				$1325.81
						27
						= WA 49.10
005-152	V	27	$862.56	$1.18	1	$1017.82
		27				$1017.82
						27
						= WA 37.70
104-104						
005-137	T	53	$1055.11	$1.18	2	$2490.06
		53				$2490.06
						53
						= WA 46.98
101-111	I	62	$1189.54	$1.18	3	$4210.97
	OO	15	947.66	1.18	1	1118.24
		77				$5329.21
						77
						= WA 69.21
005-141	DD	15	$1404.84	$1.18	1	$1657.71
		15				$1657.71
						15
						= WA 110.32

Course No.	Teachers	Enrollment	Adjusted Course Salary	x Fringe Benefits	x No. of Sec.	= Total
809-110	LL	151	$985.63	$1.18	6	$6978.24
		151				$6978.24 / 151 = WA 46.21
106-131	N	27	$4075.19	$1.18	1	$4808.77
	AA	32	798.83	1.18	2	1885.24
		59				$6693.96 / 59 = WA 113.46
102-160	CC	29	$ 831.28	$1.18	1	$ 980.91
	KK	83	1142.62	1.18	3	4044.87
		112				$5025.78 / 112 = WA 44.87
104-192	S	28	$1940.54	$1.18		$2289.84
		28				$2289.84 / 28 = WA 81.78

Instructional Costs 1972-1973

Fall

Course No.	Teachers	Enrollment	Course Salary	x Adjusted Fringe Benefits	x No. of Sec.	= Total
104-162	DD	50	$893.22	$1.20	2	$2143.73
		50				$2143.73 / 50 = WA 42.87
104-125	B	79	$1181.70	$1.20	3	$4254.12
		79				$4254.12 / 79 = WA 53.85
104-119	B	15	$945.34	$1.20	1	$1134.41
		15				$1134.41 / 15 = WA 75.63
104-118	Q	30	$967.01	$1.20	1	$1160.41
		30				$1160.41 / 30 = WA 38.68
809-153	O	52	$641.41	$1.20	2	$1539.38
	MM	67	853.01	1.20	3	3073.72
	GG	74	796.62	1.20	4	3823.78
	Y	69	575.32	1.20	3	2071.15
		262				$10,508.03 / 262 = WA 40.11
104-113	G	45	$637.36	$1.20	2	$1529.66
		45				$1529.66 / 45 = WA 33.99

Instructional Costs

Spring 1973

Course No.	Teachers	Enrollment	Adjusted Course Salary	x Fringe Benefits	x No. of Sec.	= Total
005-141	DD	17	$1488.69	$1.20	1	$1786.43
		17				$1786.43 / 17 = WA 105.08
809-110	O	146	$641.40	$1.20	6	$4618.08
	LL	50	867.60	1.20	2	2082.24
		196				$6700.32 / 196 = WA 34.19
106-131	M	84	$844.84	$1.20	2	$2027.62
	H	166	685.11	1.20	5	4110.66
	FF	40	954.34	1.20	1	1145.21
		290				$7283.49 / 290 = WA 25.12
102-160	KK	89	$887.50	$1.20	3	$3195.00
		89				$3195.00 / 89 = WA 35.90
104-192	S	59	$513.13	$1.20	2	$1231.51
		59				$1231.51 / 59 = WA 20.87

Fall 1970

1970-1971
Instructional Costs

1st Semester Rank

Course No.	Cost Per Enrollee*	x Number of Enrollees in Agri	= Semester Totals
801-151	$ 34.01	19	$ 646.19
005-143	69.70	19	1324.30
005-151	46.63	19	885.97
809-151	21.30	19	404.70
105-101	62.03	19	1178.57
106-180	18.00	19	342.00
	$251.67	19	$4781.73

*Weighted Average Cost

3rd Semester Rank

Course No.	Cost Per Enrollee*	x Number of Enrollees in Agri	= Semester Totals
104-162	$ 41.87	11	$ 460.57
104-118	24.05	11	264.55
104-119	42.05	11	472.45
809-153	95.31	11	1048.41
104-113	20.95	11	230.45
104-125	43.94	11	483.34
	$269.01	11	$2959.88

Spring 1971

1970-1971
Instructional Costs

2nd Semester Rank

Course No.	Cost Per Enrollee*	x Number of Enrollees in Agri	= Semester Totals
801-152	$ 50.78	17	$ 863.26
005-147	79.76	17	1355.92
005-152	49.00	17	834.53
005-137	79.76	17	1355.92
101-111	53.85	17	915.45
	$313.24	17	$5325.08

4th Semester Rank

Course No.	Cost Per Enrollee*	x Number of Enrollees in Agri	- Semester Totals
005-141	$ 99.71	10	$ 997.10
809-110	43.21	10	432.10
106-130	52.26	10	522.60
102-160	46.49	10	464.90
104-125	24.21	10	242.10
	$265.88	10	$2658.80

*Weighted Average Cost

Fall 1971
Instructional Costs

1st Semester Rank

Course No.	Cost Per Enrollee	x Number of Enrollees in Agri	= Semester Totals
801-151	$ 37.69	25	$ 942.25
005-143	57.66	25	1441.50
005-151	44.25	25	1106.25
809-151	45.22	25	1130.50
105-101	67.11	25	1677.75
	$251.93	25	$6928.25

3rd Semester Rank

Course No.	Cost Per Enrollee	x Number of Enrollees in Agri	= Semester Totals
104-162	$ 37.53	10	$ 375.30
104-125	46.77	10	467.70
104-119	59.64	10	596.40
104-118	46.39	10	463.90
809-153	97.00	10	970.00
104-113	28.82	10	288.20
	$316.15	10	$3161.50

Spring 1972

2nd Semester Rank

Course No.	Cost Per Enrollee	x Number of Enrollees in Agri	= Semester Totals
801-152	$ 40.54	21	$ 851.34
005-147	49.10	21	1031.10
005-152	37.70	21	791.70
104-104	46.98	21	986.58
101-111	69.21	21	1453.41
	$243.53	21	$5114.13

Spring 1972
Instructional Costs

Course No.	Cost Per Enrollee	4th Semester Rank x Number of Enrollees in Agri	= Semester Totals
005-141	$110.22	8	$ 881.76
809-110	46.21	8	369.68
106-131	113.46	8	907.68
102-160	44.87	8	358.96
104-192	81.78	8	654.24
	$396.54	8	$3172.32

Fall 1972

Course No.	Cost Per Enrollee	3rd Semester Rank x Number of Enrollees in Agri	= Semester Totals
104-162	$ 42.87	12	$ 514.44
104-125	53.85	12	646.20
104-119	75.63	12	907.56
104-118	38.68	12	464.16
809-153	40.11	12	481.32
104-113	33.94	12	407.28
	$217.20	12	$2606.40

Spring 1973

Course No.	Cost Per Enrollee	4th Semester Rank x Number of Enrollees in Agri	= Semester Totals
005-141	$105.08	12	$1260.96
809-110	34.19	12	410.28
106-131	25.12	12	301.44
102-160	35.90	12	430.80
104-192	20.87	12	250.44
	$221.16	12	$2653.92

Instructional Equipment Depreciation Schedule by courses required of Agri-Business Program Enrollees for the years 1969-1973 (assuming cost of equipment on hand per room, 6/30/74 was the same during each period).

Fall 1969

Course No.	Cost Per Enrollee x	No. of 1st Sem. Enrollees	Semester Totals
801-151	.29	13	3.77
005-143	.04	13	.52
005-151	.06	13	.78
809-151	.04	13	.52
105-101	.08	13	1.04
106-180	.01	13	.13
	.52	13	6.76

Spring 1970

		No. of 2nd Sem. Enrollees	
801-152	.31	13	.40
005-147	3.58	13	46.54
005-152	4.30	13	55.96
005-137	.02	13	.26
101-111	.58	13	7.54
	8.79	13	114.27

Fall 1970

		No. of 1st Sem. Enrollees	
801-151	.17	19	3.23
005-143	.07	19	1.33
809-151	.01	19	.19
005-101	6.45	19	122.55
106-180	.01	19	.19
105-101	.08	19	1.52
	6.79	19	129.01

Fall 1971

Course No.	Cost Per Enrollee x	No. of 1st Sem. Enrollees	= Semester Totals
801-151	.59	25	14.75
005-143	5.91	25	147.75
005-151	13.79	25	344.75
809-151	.16	25	4.00
105-101	2.17	25	54.25
	22.62	25	565.50

Fall 1971

		No. of 3rd Sem. Enrollees	
104-162	3.40	10	34.00
104-125	.05	10	.50
104-118	.07	10	.70
809-153	.05	10	.50
104-113	.83	10	8.30
104-119	.06	10	.60
	4.46	10	44.60

Spring 1972

		No. of 2nd Sem. Enrollees	
801-152	.48	21	10.08
005-147	.05	21	1.05
005-152	10.50	21	220.50
104-104	.05	21	1.05
101-111	.56	21	11.76
	11.64	21	244.44

Fall 1970

Course No.	Cost Per Enrollee x	No. of 1st Sem. Enrollees	= Semester Totals
104-162	.15	11	1.65
104-118	.03	11	.33
104-119	.02	11	.22
809-153	.33	11	3.63
104-113	.04	11	.44
104-125	.04	11	.44
	.61	11	6.71

Spring 1971

		No. of 2nd Sem. Enrollees	
801-152	14.75	17	250.75
005-147	9.22	17	156.66
005-137	.06	17	1.02
101-111	.35	17	5.95
005-152	9.22	17	156.66
	53.54	17	570.16

Fall 1971

		No. of 4th Sem. Enrollees	
005-141	.10	10	1.00
809-110	.04	10	.40
106-130	12.59	10	125.40
102-160	.17	10	1.70
104-125	.43	10	4.30
	13.28	10	132.80

Spring 1972

Course No.	Cost Per Enrollee	x	No. of 4th Sem. Enrollees	=	Semester Totals
005-141	8.40		8		67.20
809-110	.02		8		.16
106-131	7.01		8		56.08
102-160	.13		8		1.04
104-192	.11		8		.88
	15.67		8		125.36

Fall 1972

		No. of 3rd Sem. Enrollees	
104-102	.09	12	1.08
104-125	.07	12	.84
104-119	.11	12	1.32
104-118	.02	12	.24
104-113	.06	12	.72
809-153	.68	12	8.16
	1.03	12	12.36

Spring 1973

		No. of 4th Sem. Enrollees	
005-141	.75	12	9.00
809-110	.14	12	1.68
106-131	3.80	12	45.60
102-160	.12	12	1.44
104-192	.62	12	7.44
	5.43	12	65.16

chedule of SPACE UTILIZATION by room by semester for the years 1969-1973.

Fall 1969

Room No.	Sq. Ft.	Total Sq. Ft.	Sq. Ft./Total Sq. Ft. %	x (Semester ie ½ yr) Total Bldg. Depr.	= (assuming 50 year Life) Depreciation Cost Per Room
226	664	224,868	.2953%	38,892.20	114.85
235	664		.2953%		114.85
220	663		.2948%		114.65
233	667		.2966%		115.35
116	651		.2895%		112.59
118	682		.3033%		117.96
237	664		.2953%		114.85
213	663		.2948%		114.65
114	805		.3580%		139.23
215	736		.3273%		127.29
211	843		.3749%		145.81

Spring 1970

226	664	224,868	.2953%	38,892.20	114.85
220	663		.2948%		114.65
211	843		.3749%		145.81
Ag. Bldg.	2919	6,490	44.9769%	1,236.00	555.91
116	651		.2895%		112.59
227	814		.3620%		140.79
229	754		.3353%		130.41
203	814		.3620%		140.79
213	663		.2948%		114.65

Fall 1970

235	664	224,868	.2953%	39,204.25	115.77
220	663		.2948%		115.57
124	600		.2668%		104.60
211	843		.3749%		146.98
226	664		.2953%		115.77
213	663		.2948%		115.57
237	664		.2953%		115.77
230	664		.2953%		115.77
111	904		.4020%		157.60
Ag. Lab	2919	6,490	44.9769%	1,236.00	555.91
228	694	224,868	.3086%	39,204.25	151.33
129	660		.2935%		115.06

Fall 1970 (cont.)

Room No.	Sq. Ft.	Total Sq. Ft.	Sq. Ft./Total Sq. Ft. %	x (Semester ie ½ yr) Total Bldg. Depr.	= (assuming 50 year Life) Depreciation Cost Per Room
114	805	224,868	.3580%	39,204.25	140.35
118	682		.3033%		118.91
233	667		.2966%		116.28
215	736		.3273%		128.32
116	651		.2895%		113.90
Spring 1971					
220	663	224,868	.2948%	39,204.25	115.57
230	664		.2953%		115.77
235	664		.2953%		115.77
211	843		.3749%		146.98
222	904		.4020%		157.60
116	651		.2895%		113.50
145½	541		.2406%		94.33
Ag. Lab	2919	6,490	44.9769%	1,236.00	555.91
135	652	224,686	.2899%	39,204.25	113.65
111	904		.4020%		157.60
229	754		.3353%		131.45
118	682		.3033%		118.91
237	664		.2953%		155.77
212	844		.3753%		147.14
213	663		.2948%		115.57
227	814		.3620%		141.92
Fall 1971					
220	663	224,868	.2948%	39,512.50	116.48
144	572		.2544%		100.52
111	904		.4020%		158.84
160	755		.3358%		132.68
114	805		.3580%		141.46
237	664		.2953%		116.68
226	664		.2953%		116.68
124	600		.2668%		105.42
222	904		.4020%		158.84
134	712		.3166%		125.10
237	664		.2953%		116.68
143	550		.2446%		96.65
149	462		.2055%		81.20
233	667		.2966%		117.19
228	694		.3086%		121.94
215	736		.3273%		129.32

Spring 1972

Room No.	Sq. Ft.	Total Sq. Ft.	Sq. Ft./Total Sq. Ft. %	x (Semester ie ½ yr) Total Bldg. Depr.	= (assuming 50 year Life) Depreciation Cost Per Room
226	664	224,868	.2953%	39,512.50	116.68
211	843		.3749%		148.13
237	664		.2953%		116.68
144	572		.2544%		100.52
220	663		.2948%		116.48
W103	483	6,490	7.4422%	1,236.00	92.04
222	904	224,868	.4020%	39,512.50	158.84
Ag. Lab	2436	6,490	37.5347	1,236.00	466.18
215	736	224,868	.3273%	39,512.50	129.32
111	904		.4020%		158.84
229	754		.3353		132.49
212	844		.3753%		148.29
213	663		.2948%		116.48
203	814		.3620%		143.04

Fall 1972

201	723	224,868	.3215%	39,686.23	127.59
215	736		.3273%		129.89
114	805		.3580%		142.08
111	904		.4020%		159.59
116	651		.2895%		114.89
118	682		.3033%		120.37
135	652		.2899%		115.05
230	664		.2953%		117.19
228	694		.3086%		122.48
134	712		.3166%		125.65
W103	483	6,490	7.4422%	1,236.00	92.04
144	572	224,868	.2544%	39,686.23	100.96
235	664		.2953%		117.19

Spring 1972

215	736	224,868	.3273%	39,686.23	129.84
201	723		.3215%		127.59
220	663		.2948%		117.00
230	664		.2953%		117.19
213	663		.2948%		117.00
237	664		.2953%		117.19
233	667		.2966%		117.70
226	664		.2953%		117.19

pring 1972 (cont.)

om No.	Sq. Ft.	Total Sq. Ft.	Sq. Ft./Total Sq. Ft. %	x (Semester ie ½ yr) Total Bldg. Depr.	= (assuming 50 year Life) Depreciation Cost Per Room
227	814	224,868	.3620%	39,686.23	143.64
114	805		.3580%		142.08
212	844		.3753%		149.94

Sources: Mr. Norbert Wurtzel, Assistant Director, Administrative Services, Area Vocational Technical & Adult Education District One; and Physical Facilities Inventory 1968 & 1971.

Time Utilization Figures

Fall 1969

Course No.	Room No.	Enrollment	Hours/Total Hours	No. of Sections	Time Utilization
801-151	220	16/26		4	.6154
	235	3/26		1	.1154
	220	6/23		2	.2609
	233	18/24		4	.7500
		193			
005-143	116	16/16	5/26	1	.1923
005-151	118	14/14	3/24	1	.1250
809-151	237		6/23	2	.2609
	235		4/26	1	.1538
		65			
105-101	235		15/26	3	.5769
	213		25/33	6	.7576
	114		5/39	1	.1563
	215		10/20	1	.5000
		254			
106-180	211		12/17	6	.7059
	235		2/26	1	.0769
		145			

Spring 1970

801-152	226		25/33	4	.7576
	220		10/25	8	.4000
	211		10/23	2	.4348
		227			
005-147	New Bldg.	18/18	(Not Listed probably ¼)	1	.2500
005-152	New Bldg. 116	15/15	(Not Listed probably ¼)	1	.2500
005-137	116	27/27	3/20 (guess)	1	.1500
101-111	223		10/30 (guess)	2	.3333
	229		5/40	1	.1250
	213		5/10	1	.5000
		72			

Time Utilization Figures

Fall 1970

Course No.	Room No.	Enrollment	Hours/Total Hours	No. of Sections	Time Utilization
801-151	235		3/28	1	.1071
	220		3/25	1	.1200
	124		3/27	1	.1111
	211		3/28	1	.1071
	226		28/38	5	.7368
	213		8/23	2	.3478
	237		5/28	1	.1786
	230		3/26	1	.1154
		269			
005-143	114	20/20	5/29	1	.1724
005-151	New Shop	20/20		1	½
809-151	237		3/28	1	.1071
	228		6/22	2	.2727
		87			
005-101	235		5/28	1	.1786
	129		5/34	1	.1471
	111		5/29	1	.1724
	114		5/32	1	.1563
	118		5/31	1	.1613
	233		15/38	3	.3947
	215		5/8	1	.6250
	230		5/26	1	.1923
	237		5/28	1	.1786
	116		5/22	1	.2273
		280			
106-180	211		16/28	7	.5714
		158			

Fall 1970

104-162	118		6/31	2	.1935
	124		2/27	1	.0741
		60			
104-118	114	35/35	4/32	2	.1250
104-119	114	38/38	4/32	2	.1250
809-153	220		1/25	1	.0400
	228		1/22	1	.0455
	124		3/27	1	.1111
		53			
104-113	114	26/26	5/32	1	.1563
104-125	114	26/26	5/32	1	.1563

Time Utilization Figures

Fall 1971 — Segment I

Course No.	Room No.	Enrollment	Hours/Total Hours	No. of Sections	Time Utilization
801-151	220		15/24	5	.6250
	144		11/30	4	.3667
	111		11/34	3	.3235
	160		8/35	3	.2286
	114		3/30	1	.1000
	237		15/34	3	.4412
	226		9/35	2	.2571
	124		3/32	2	.0938
		436			
005-143	222	23/23	4/26	1	.1739
005-151	134	23/23	1/37	1	.0270
	Ag. Lab	23/23	4/4	1	1.0000
809-151	237		9/35	3	.2571
	220		3/24	2	.1250
		122			
105-101	143		5/35	1	.1429
	134		15/37	4	.4054
	139		5/24	1	.2083
	233		25/36	8	.6944
		330			

Fall 1971 — Segment II

104-162	222	53	6/26	2	.2308
104-125	111		5/34	1	.1471
	114		5/30	1	.1667
		51			
104-118	114		4/30	3	.1333
		15			
809-153	228		18/29	6	.6207
	149		1/23	1	.0435
		122			
104-113	215		4/31	1	.1290
	222		4/26		.1538
		146			
104-119	111		4/34	1	.1176
		15			

Spring 1971 Segment I

Course No.	Room No.	Enrollment	Hours/Total Hours	No. of Sections	Time Utilization
801-152	220		3/24	1	.1250
	230		12/24	4	.5000
	235		21/21	7	1.0000
	211		3/3	1	1.0000
	222		6/25	2	.2400
	116		3/26	1	.1154
	145½		3/3	1	1.0000
		289			
005-147	Ag. Lab	14/14	½ (guess)	1	.5000
005-152	M-135	19/19	½ (guess)	1	.5000
	Ag. Lab	19/19	½ (guess)	1	.5000
005-137	116		5/26	1	.1923
	111		5/29	1	.1724
		34			
801-111	229	45/45		2	.5360

Spring 1971 Segment II

005-141	118	14/14	5/18	1	.2778
809-110	237	100/100	15/18	5	.8333
106-130	212	88/88		4	1.0000
102-160	213			1	.4000
	227			1	.1070
	229			1	.0810
		80			
104-125	111	32/32	5/29	1	.1724

Time Utilization Figures

2nd Semester Rank

Spring 1972

Course No.	Room No.	Enrollment	Hours/Total Hours	No. of Sections	Time Utilization
801-152	226		14/29	4	.4827
	211		3/25	1	.1200
	237		4/23	1	.1739
	144		3/28	1	.1071
	220		12/28	5	.4285
		237			
005-147	W103	27/27	4/28	1	.1428
005-152	222	27/27	1/31	1	.0322
	Ag. Lab		4/4	1	1.0000
104-104	215		4/27	1	.1481
005-137	111		4/34	1	.1176
		53			
801-111	229	77/77	20/29	4	.6896

Spring 1972

4th Semester Rank

005-141	222	15/15	5/31	1	.1613
809-110	237	151/151	18/23	6	.5806
106-131	212	59/59	15/40	3	.3750
102-160	203		6/35	2	.1579
	213		6/24	2	.2500
		112			
104-192	111	28/28	15/38	1	.3947

Spring 1972

3rd Semester Rank

104-162	201		3/33	1	.0909
	215		3/37	1	.0811
		50			
104-125	114	79/79	15/30	3	.5000
104-119	111	15/15	6/28	1	.2143
104-118	116		4/37	1	.1081
	118	30	2/38	1	.0526
		30			

Time Utilization Figures

Spring 1973 (cont.)

Course No.	Room No.	Enrollment	Hours/Total Hours	No. of Sections	Time Utilization
809-153	135		2/34	1	.0588
	201		7/33	3	.2121
	230		4/38	2	.1053
	235		5/36	2	.1389
	228		12/40	4	.3000
	134		3/38	1	.0789
	W103		4/24	1	.1667
	144		2/27	1	.0741
		262			
104-113	215	45/45	8/37	2	.2162

Spring 1973

005-141	215	17/17	3/22	1	.1389
809-110	201		3/33	1	.0909
	220		3/28	1	.1071
	230		1/34	1	.0294
	213		1/3	1	.3333
	237		6/30	2	.2000
	233		6/32	2	.1875
	226		2/29	1	.0690
		196			
106-131	212		1/1	8	1.0000
		290			
104-192	114	59/59	½ (guess)	2	.5000
102-160	213		2/3 (guess)	2	.6067
	227		3/38	1	.0789
		89			

Instructional Rooms
Building Depreciation Costs Per Course by semester for Agri-Business Enrollees for years 1969-1973.

Fall 1969

Course No.	Total Cost	Cost Per Enrollee	x Number Agri-Business Enrollees	= Total
801-151	$200.35	$1.04	13	$13.52
005-143	21.65	1.35	13	17.55
005-151	14.75	1.05	13	13.65
809-151	47.62	.73	13	9.49
105-101	238.53	.94	13	12.22
106-180	111.76	.77	13	10.01
				$76.44

Spring 1970

801-152	$ 63.40	$ .87	13	$ 11.31
005-147	142.02	7.89	13	102.57
005-152	142.02	9.47	13	123.11
005-137	28.15	1.04	13	13.52
101-111	120.56	1.67	13	21.71
				$272.22

Fall 1970 (1st Segment)

801-151	$213.16	$ .79	19	$ 15.01
005-143	27.17	1.40	19	26.60
005-151	284.10	14.21	19	269.99
809-151	53.67	.62	19	11.78
105-101	300.74	1.07	19	20.33
106-180	83.98	.53	19	10.07
				$353.78

Fall 1970 (2nd Segment)

Course No.	Total Cost	Cost Per Enrollee	x Number Agri-Business Enrollees	= Total
104-162	$ 30.76	$ .51	11	$ 5.61
104-118	17.54	.50	11	5.50
104-119	17.54	.46	11	5.06
809-153	23.13	.44	11	4.84
104-113	21.94	.84	11	9.24
104-125	21.94	.84	11	9.24
				$39.49

Spring 1971 (1st Segment)

801-152	$480.33	$ 1.66	17	$ 28.22
005-147	232.09	16.58	17	281.86
005-152	243.45	12.81	17	217.77
005-137	49.00	1.44	17	24.48
101-111	70.46	1.57	17	26.69
				$579.02

Spring 1971 (2nd Segment)

005-141	$ 33.03	$2.36	10	$23.60
809-110	129.80	1.30	10	3.00
106-130	147.14	1.67	10	16.70
102-160	72.07	.90	10	9.00
104-125	27.17	.85	10	8.50
				$70.80

Instructional Rooms
Building Depreciation Costs Per Course by semester for Agri-Business Enrollees for the years 1969-1973.

Fall 1971 (1st Segment)

Course No.	Total Cost	Cost Per Enrollee	x Number Agri-Business Enrollees	= Total
801-151	$295.99	$ .68	25	$ 17.00
005-143	27.62	1.20	25	30.00
005-151	467.50	20.33	25	508.25
809-151	44.56	.37	25	9.25
105-101	62.82	.49	25	12.25
				$576.75

Fall 1971 (2nd Segment)

104-162	$36.66	$ .67	10	$ 6.70
104-125	46.95	.92	10	9.20
104-118	18.86	1.26	10	12.60
809-153	79.22	.65	10	6.50
104-113	41.11	.28	10	2.80
104-119	18.68	1.25	10	12.50
				$50.30

Spring 1972 (1st Segment)

801-152	$155.07	$ .65	21	$ 13.65
005-147	13.14	.49	21	10.29
005-152	469.30	17.38	21	364.98
104-104	38.20	.72	21	15.12
101-111	91.37	1.19	21	24.99
				$429.03

Spring 1972

Course No.	Total Cost	Cost Per Enrollee	x Number of Agri-Business Enrollees	= Total
005-141	$25.63	$1.71	8	$13.60
809-110	67.74	.45	8	3.60
106-131	55.61	.94	8	7.53
102-160	51.71	.46	8	3.68
104-192	62.64	2.24	8	17.92
				$46.32

Fall 1972

104-162	$ 22.13	$ .44	12	$ 5.28
104-125	71.04	.90	12	10.80
104-119	34.18	2.28	12	27.36
104-118	18.75	.63	12	7.56
809-153	131.92	.50	12	6.00
104-113	28.09	.62	12	7.44
				$64.44

Spring 1973

005-141	$ 18.03	$1.06	12	$12.72
809-110	120.09	.61	12	7.32
102-160	50.34	.57	12	6.84
104-192	71.04	1.20	12	14.40
106-131	149.94	.51	12	6.12
				$47.40